### THE SIGHT-SAVING REVIEW

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### PAN-AMERICAN CONGRESS AT SANTIAGO

Dr. Luis Sanchez Bulnes is awarded the Gold Medal of the Pan-American Congress of Ophthalmology at session on prevention of blindness.

NE of the high points of the Pan-American Congress of Ophthalmology held at Santiago, Chile, January 8-14, 1956, was the session on prevention of blindness at which the National Society's Pan-American Gold Medal was presented to Dr. Luis Sanchez Bulnes, director of the Association for Prevention of Blindness of Mexico, by Dr. Moacyr E. Alvaro, of Sao Paulo, Brazil, president of the Pan-American Association. In making the presentation, Dr. Alvaro told of the medical care given to indigent eye patients by the Mexican Association, and of its leadership in the postgraduate education of ophthalmologists. Declaring that 72 per cent of blindness can be prevented with adequate measures, Dr. Alvaro stated that for many years Dr. Sanchez Bulnes has been the driving force in helping the Mexican Association to achieve its goal.

### **Definition of Blindness**

At the prevention of blindness session, Drs. Moacyr Alvaro and Rubens Belfort Mattos of Sao Paulo read a paper on the definition of blindness, advocating that a person with visual acuity of 20/200 or less in the better eye with correcting lenses be considered blind, and that this definition be used throughout the western hemisphere. Considerable discussion followed, after which the subject was



Dr. Moacyr E. Alvaro of Sao Paulo, Brazil, left, president of the Pan-American Association of Ophthalmology for the past four years, and his successor, Dr. Brittain F. Payne of New York, elected president at the Santiago meeting. Dr. Alvaro is now the Association's executive director.

referred for study to the Pan-American Association's Committee on Prevention of Blindness.

Drs. Brittain F. Payne and Franklin M. Foote presented a paper on the dual classification of causes of blindness, by site and etiology, and its application in recent years in the United States. This classification was adopted by the Pan-American Association at its Havana meeting in 1948, and by the International Association for Prevention of Blindness in 1950 at its London meeting.

### Study of Causes

Based on a study of 23,000 blind persons in seven states, the authors

reported the following causes by site: Eyeball in general, 24 per cent (glaucoma—13 per cent); cornea, 8 per cent; iris and ciliary, 5 per cent; lens, 27 per cent; choroid and retina, 19 per cent; optic nerve and visual pathways, 13 per cent; other and unspecified, 4 per cent. By etiology: infections, 14 per cent; injuries, 7 per cent; poisoning, 1 per cent; neoplasms, 1 per cent; general systemic diseases, 10 per cent; prenatal origin, 11 per cent; unknown to science or not specified, 56 per cent.

Dr. Humberto Escapini of El Salvador reported on a study he had made in his country, applying the dual classification to 660 blind persons examined by eye specialists at the clinic of the Hospital Rosales, at the school for the blind, the Asylum for Indigent Blind, and his private records. The definition of blindness used was 20/200 or less visual acuity in the better eye with correcting lenses, or a limitation of the field of vision to 20 degrees or less in the widest diameter. He said that, by site, blindness involved eyeball in general in 60 per



Dr. J. Wesley McKinney of Memphis, Tennessee, left, new secretary for North America; and Dr. Jorge Balzo of Buenos Aires, secretary for South America.



Mrs. Harry S. Gradle congratulates Dr. Sanchez
Bulnes on the Pan-American Gold Medal award.

cent (glaucoma—53 per cent); cornea, 9 per cent; iris and ciliary, 7 per cent; lens, 3 per cent; choroid and retina, 8 per cent; optic nerve and visual pathways, 5 per cent; miscellaneous or not specified, 8 per cent. By etiology, infections caused 21 per cent; injury, 2 per cent; general systemic disease, 3 per cent; prenatal origin, 5 per cent; unknown to science or not specified, 69 per cent.

### Other Reports

Other reports on activities for prevention of blindness in their respective countries were made by Drs. Magin Diez of Argentina, Aniceto Solares of Bolivia, Francisco Amendola of Brazil, Tomas R. Yanes of Cuba, Honorio Campusano of Paraguay, Luis A. Boado of Uruguay. Dr. Juan Verdaguer of Santiago, Chile, reported the organization of a Chilean Association for the Prevention of Blindness and introduced Mr. Arturo

Edwards, president of the Association and Senora Alicia Canos, a member of the board; Dr. Verdaguer paid tribute to the interest of several Chilean ophthalmologists in prevention, including among others Drs. Rene Contardo, Espildora Luque and Santiago Barrenechea.

The delegates voted that the 1948 action of the Pan-American Association of Ophthalmology adopting the standard dual classification of causes of blindness be confirmed, and that all countries be asked to make studies of the causes of blindness using this classification so that data can be compared and sound prevention programs undertaken. This action was endorsed by the executive committee of the Association on January 13, 1956.

### Attendance from U.S.

At least 140 United States ophthal-mologists attended the Santiago Congress, many with their families. Symposia were given on collagen diseases, glaucoma, infantile glaucoma, secondary glaucoma, retinal detachment, psychosomatic ophthalmology, tropical diseases, physiopathology and surgery of the lens, neuro-ophthalmology and intra-ocular tumors. The National Society showed the Spanish version of its film, "Glaucoma," and presented an exhibit on trends in causes of blindness.

New officers of the Association elected are: President, Dr. Brittain F. Payne of New York; Executive Director, Dr. Moacyr E. Alvaro of Sao Paulo; Secretary for South America, Dr. Jorge Balzo of Buenos Aires; Secretary for North America, Dr. J. Wesley McKinney of Memphis, Tennessee. It was voted to hold the next Congress in Caracas, Venezuela,

in 1960. An interim Congress will be held April 7–10, 1957, at the Statler Hotel, New York, jointly with the National Society for the Prevention of Blindness.

FRANKLIN M. FOOTE, M.D.

### 1956 NSPB CONFERENCE

The 1956 Conference of the National Society for the Prevention of Blindness will be held in the Palmer House, Chicago, March 26-28. Among the main topics for discussion are: Finding Persons with Eve Trouble Early and Arranging Care; Progress in Industrial Vision; Upgrading Educational Facilities for Partially Seeing Children; A Multi-Discipline Approach to the Social and Emotional Adjustment of School Children with Eve Handicaps; Putting Television to Work for Your Agency's Program; and Current Status of Scientific Basis for Prevention of Blindness. There will be a demonstration of vision testing methods and discussion of follow-up procedures.

At the Conference luncheon on Wednesday, March 28, Dr. Peter C. Kronfeld, professor of ophthalmology, University of Illinois, will speak on Glaucoma—A Community Problem.

### WILLIAM FISHER, JR. JOINS NSPB

William Fisher, Jr., formerly Director of Public Information of the American Foundation for Overseas Blind, Inc., has been named Chief of News Bureau of the National Society for the Prevention of Blindness.

A journalism graduate of Stetson University, Deland, Florida, Mr. Fisher is former bureau chief of the Daytona Beach, Florida, News-Journal and correspondent for the Associated Press and the Jacksonville, Florida, Times-Union.

### Luis Sanchez Bulnes, M.D.



Dr. Sanchez Bulnes in his acceptance speech following presentation of the Pan-American Gold Medal. He is professor of postgraduate ophthalmology at the medical school of Mexican National University, and director of the Mexican National Association for the Prevention of Blindness.

DR. LUIS SANCHEZ BULNES, recipient of the Pan-American Gold Medal of the U. S. National Society for the Prevention of Blindness, was born in Mexico City and graduated from the National School of Medicine of the University of Mexico in 1931. His medical thesis was based on a study of the results of fever therapy in syphilitic optic atrophy. His residency in ophthalmology was at the Hospital de la Luz where the distinguished Dr. Rafael Silva was chief of the eye service.

In 1931 Dr. Sanchez Bulnes also joined the staff of the Mexican National Association for the Prevention of Blindness, which had been established by interested business, social and medical leaders in 1918. In 1938 Dr. Bulnes became director of the Association and has been a driving force in its excellent program.

The Association maintains a hospital with 19 beds, all of which are entirely free, and provides outpatient care for all kinds of eye conditions. It has fostered high-caliber postgraduate ophthalmological training, and some of its graduates are now in Campeche, Baja California, Sonora, Tabasco, Tampico and Vera Cruz.

During the past thirteen years the Association has held ophthalmological conferences which have attracted physicians from all over the Americas. Dr. Moacyr E. Alvaro has said: "Their approach to the problem of prevention of blindness is definitely a good one, since we all know that basically what we need most are well-qualified ophthalmologists who will be able to diagnose and treat adequately all the people with eye ailments."

The Association sends a mobile eve clinic through several states in central Mexico outside the federal district, providing free ophthalmological examinations to indigents, medical treatment and minor surgery, and eveglasses. In Mexico City the Association since 1948 has been conducting an extensive program among children in the public schools. Four trained workers screen about 40,000 children each year, and those with signs and symptoms of eye trouble or who have less than 20/20 visual acuity are referred for eye care. Many children go to private practitioners; about 7,000 each year are refracted under cycloplegia and treated at the National Association's hospital by the four oculists who participate in this part of the program.

In 1933 Dr. Sanchez Bulnes was appointed associate professor at the medical school of Mexican National University, and was made professor and head of the department of ophthalmology in 1942. He is now professor of postgraduate ophthalmology. In 1947 he was elected president of the Mexican Ophthalmological Society. Dr. Bulnes served as secretary-general of the IV Pan-American Congress of Ophthalmology which was held in Mexico City in 1952.

In 1936 Dr. Sanchez Bulnes married Miss Leonora Fontan of Mazatlan, Sinaloa. They have three children, two boys 18 and 15 years of age, and a daughter of 13 years.

Previous recipients of the Pan-American Gold Medal for prevention of blindness were Dr. Harry S. Gradle of California, in 1948, and Dr. A. Vasquez Barriere of Montevideo, Uruguay, in 1952.

#### CYCLISTS NEED SAFETY GLASSES

The force with which even the frailest object can hit the eye of a motor-cyclist was brought out in an account sent the *British Journal of Ophthalmology* by Dr. Doris Rose of Eastbourne. A man came into her office suffering from an intensive keratitis caused by an encounter six weeks before with a "daddy longlegs." Traveling at 40 miles an hour, he had seen the insect just before him, and from then on had suffered eye irritation.

Under local anesthetic the foreign body was removed. It was a fragment three mm, long of an insect leg which had driven straight into the deep substance of the cornea, where it was vertically embedded. After its removal the keratitis cleared.

### NEW MAGNET TESTED

A new multiple-coil electromagnet may prove effective in drawing non-ferrous metals from injured eyes. Its inventor, William Vail Lovell of the Lovell Research Laboratory, Sanford, Florida, describes the device in the September 1955 issue of *Electronics*. As developed about ten years ago the magnet was used to pick up relatively large objects. Then studies were begun in possible application of the device to eye surgery, and particles of copper were moved about 3 mm. through cow-eye vitreous on a tray.

An extended research program then began in cooperation with the Ocular Research Department of Walter Reed Army Hospital, since the need for a magnet of this kind had been demonstrated in the Korean War. About a fourth of the eye injuries due to metal fragments involved nonferrous metals.

The magnet has now been developed to a point at which particles of copper, aluminum and magnesium have been extracted from the eves of experimental animals, using a 25-kw amplifier at 3 to 12 kc. The vitreous is highly resistant; a pull of about 5 g is needed to move a piece of copper of 2 cubic mm. through fresh vitreous from a cat's eve. If such a piece has been embedded for two weeks in a living eye a pull of 100 g may fail to dislodge it, because of the inflammatory process which embeds the object and eventually destroys the eye. The required force in g's is inversely proportional to the linear dimensions of the metal.

No trials have been made on human eyes, but there appears to be a favorable prospect for removing objects of at least one mm. in smallest dimension if early operation is possible.

## In the Service of Sight

### HELENOR CAMPBELL FOERSTER



At a dinner in her honor at the Park Plaza Hotel, St. Louis, on January 26, Mrs. Foerster receives the Leslie Dana Gold Medal from Dr. T. E. Sanders of the St. Louis Society for the Blind.

MRS. ROLAND C. FOERSTER of San Francisco, well-known ophthalmological research scientist, was awarded the Leslie Dana Gold Medal for 1955 in ceremonies held in St. Louis on January 26. This annual award for outstanding public service in sight conservation was established 26 years ago by the late Leslie Dana, former president of the St. Louis Society for the Blind.

Mrs. Foerster, the former Helenor Campbell Wilder, is internationally known for accomplishments during her 30 years in the laboratory of the Army Medical Museum and the Armed Forces Institute of Pathology. At her retirement in 1953 she was chief of the Institute's section on ophthalmic pathology.

Among other contributions to scientific advancement Mrs. Foerster demonstrated Toxoplasma organisms in necrotic and highly disorganized intraocular masses that had puzzled pathologists for years. Another disease found chiefly in children was shown by her to be caused by migration of the larval stage of worms. Her demonstration of the specific causes of blindness in these cases has enabled the attending physicians to institute appropriate treatment and indicated channels for future research.

Mrs. Foerster was born in Baltimore, Maryland, and began her career as a laboratory technician at Johns Hopkins Medical School, During World War I she served at Camp Meade as an Army bacteriologist. She was engaged in laboratory work at the Army Medical Museum-now the Armed Forces Institute of Pathology -when the Registry of Ophthalmic Pathology was established there by Dr. Harry S. Gradle and General George R. Collender. Among the early consultants to the Registry were Drs. Frederick H. Verhoeff, Jonas S. Friedenwald, William C. Finnoff, Marcus Feingold and Georgiana Dvorak Theobald. It was through association with such eminent ophthalmologists as these and through constant study of the slides which she sectioned that Mrs. Foerster first became interested in ophthalmic pathology.

To a long list of achievements which gained for her international recognition was added in 1954 the Exceptional Civilian Service Award, highest civilian award in the Department of Defense. She was the first woman to be elected an honorary member of the American Academy of Ophthalmology and Otolaryngology and she holds the Academy's Honor Key. She also is a member of the American Association of Pathologists and Bacteriologists, representing the only acceptance in the history of that organization of an individual without an M.D. degree.

In 1953 Mrs. Foerster was honored as Woman of the Year in Science by the Woman's National Press Club; in 1955 the degree of LL.D. was conferred on her by Mills College, Calif. She is co-author of the text and bore entire responsibility for illustrations in Atlas and Textbook of Ophthalmology produced by AAOO and the Armed Forces Institute of Pathology.

### MARYLAND PROGRAM

A vigorous campaign is being pushed on several fronts by the Maryland Society for the Prevention of Blindness to protect the citizens of the state from conditions endangering eye health. One victory was scored in the state legislature, when two attempts to weaken the state law prohibiting the sale and use of fireworks were defeated by vigilant friends of the Society.

A bill introduced during the 1955 state legislative session, which proposed "to prohibit the sale of eveglasses by other than certified ophthalmic dispensers or unless prescribed by physicians or optometrists" failed to pass. The Society is now responding by an educational program to inform Maryland citizens that every one of them can get a complete eye examination, glasses and medical eye care if necessary, for whatever he is able to pay in fees. This is possible because of the close cooperation between eve clinics, opticians, and organizations ready to finance needy patients.

Several projects are under way to insure good lighting conditions in schools and protection for the eyes of students in vocational and industrial arts shops. The danger of oxygen therapy in conducing to retrolental fibroplasia in premature babies is being publicized.

The eye health of school children is improved by the efforts of the Society and by a new system of vision screening practiced in Baltimore.

After receiving special instruction in sight testing, volunteers in association with public health nurses are giving Massachusetts Vision Tests to students in a hundred Baltimore schools.

### USE OF MASS MEDIA TO INFORM THE PUBLIC

DONALD D. HOOVER

President, Bozell and Jacobs, Inc. New York

A leader in the advertising field explains how the tools and techniques of mass communication have been utilized most effectively in the community attack on blindness.\*

THE very existence of an organization called the National Society for the Prevention of Blindness and a cursory sampling of its fields of work are ample testimony that the battle against blindness is one which rightly engages the attention of all segments of that intangible entity we call the community.

What is an advertising man doing in this battle? Good eye care isn't a product, like soap, or insurance, or automobiles. I would be the first to agree that good eye care depends upon the bringing together of a patient and the proper professional person, resulting in a specific diagnosis and specially prescribed corrective treatment. It seems to me, however, that our efforts to prevent blindness will be furthered if we can borrow some of the techniques and tools of mass communication to help the potential patient understand that he may need certain assistance, to increase his desire for proper corrective treatment, and to instill in him a broadened confidence in the treatment he is receiving.

In other words I think that the National Society, by utilizing the media of mass communication, is helping to create the kind of climate that will help the man in the street save his own sight. This phase of the Society's work depends for its success on the cooperation of the press, radio, television; the magazines of the nation, and the business firms whose advertising budgets make these media possible.

### Support of Advertising Council

In recent years these elements of our community have demonstrated a constantly increasing interest in sight conservation by taking part in the observance of September as "Sight-Saving Month." Business expresses its support by devoting a portion of the time and space it purchases in the media of mass communication to important public service projects. More than that, through the organization of The Advertising Council it endeavors to bring to public service projects those volunteer skills and talents which enable important community agencies to reach millions upon millions of Americans with educational messages or appeals for funds. During the month of March alone a number of vital agencies are being helped in this manner, including the 4-H Clubs, Girl Scouts, Camp Fire Girls, Boys' Clubs, the United Negro College Fund and the Overseas Relief Appeals of the various religious faiths.

<sup>\*</sup> Presented at the Annual Conference of the National Society for the Prevention of Blindness, New York, March 16, 1955.

The Advertising Council endeavors to assist as many projects as it can, but the limitations of time and space make necessary a certain amount of screening. We of the National Society are grateful, therefore, that for the last four years the "Sight-Saving Month" campaign has enjoyed The Advertising Council's support. This has opened many doors of help to the Society and has made millions more people aware of the fact that if they are to enjoy the advantages of good vision throughout their lives they must do something about it personally.

### **Network Programs**

For example, during September of last year, as a result of this extremely practical support, a total of 29 network radio programs, each of them broadcast over several hundred local stations, carried useful sight-saving messages. Mothers were told of some of the early signs of eye trouble in children; industrial workers were reminded that eye protection, worn at the right time, can actually save sight, and men and women over 40 were reminded of the wisdom of an eye examination every two years.

Radio was not alone in its help. Ten national network television programs devoted a portion of their expensive time to sight-saving messages. And the networks were not alone, either. Local radio stations and local television stations, each of whom received kits of broadcast material from the National Society, carried many day-to-day messages.

### Response from 20,000

Some of the people—about 20,000—who heard or saw the results of this splendid cooperation realized that they

needed help to solve their eye problems and, because they did not know where to turn, wrote to the National Society for guidance. Each of them was mailed a folder giving the basic facts of eye care, and about 500 of those who had defined their problems in sufficiently specific terms received personal letters directing them to the appropriate assisting agency in their own communities.

It is always difficult to measure the extent of this cooperation because America is so large, and we in New York can never be sure what is happening in any other part of the country. However, the letters asking for help sometimes mention the source which stimulated the request, and it is from a study of these that we know of some of the cooperation we have received.

In addition to the network participation local radio stations in all 48 states and television stations in 39 states took part in last year's sight-saving month campaign. Twenty-four magazines, most of them with important national circulation, gave the campaign their editorial support. Bus companies in two score cities displayed the Society's public service advertising. During September newspapers everywhere carried educational stories and editorials on the importance of eye health.

### Low Cost to National Society

All this cooperation was contributed by the mass media and their advertisers; it cost the Society nothing for the time and space involved. The Society created and produced the materials required, but the cost of this was relatively small. As a matter of fact, it has been estimated that the value of the time and space devoted to the September campaign is the equivalent of about one million dollars in advertising. To obtain it the National Society invested an infinitesimal fraction of one per cent.

The September campaign is but one part of the Society's year-round effort to create and maintain a sensible climate for good eye health. From time to time we try through news releases and radio or TV stories to carry forward the program of eye health education. We remind parents at Christmas time, for example, to avoid purchasing toys with built-in eve hazards. As the baseball season opened one year, we reported in a news release which was widely used that, despite the claims of ball players, there is no more blindness among umpires than among any other occupational group. This story served as a device for us to remind all who read it that the best protection against blindness is a periodic, professional eve examination.

For two years the National Society has maintained in its headquarters a research advisory service for editors and writers of magazines. As a result, more and more articles on eye care are appearing in the mass circulation magazines and, equally important, the information in them is likely to be accurate.

We of the National Society are grateful to the mass communication media for the help they are giving us. We intend as time goes by to take increasing advantage of their willingness to cooperate.

There are, then, reasons why an advertising man, too, has a place in the ranks of those who fight the battle against blindness.

### 1956 SUMMER COURSES

Four colleges and universities will be offering full-time integrated six- or eight-week summer courses that provide the complete basic preparation recommended by the National Society for the Prevention of Blindness for teachers and supervisors of partially seeing children.

Illinois State Normal University, Normal, Illinois. Date: June 18-August 10. Dr. Rose E. Parker, Director of Special Education.

San Francisco State College, San Francisco, California. Date: June 25-August 3. Mrs. Florence G. Henderson, Associate Professor of Education.

Syracuse University, Syracuse, New York. Date: July 2-August 10. (Will also have advanced workshop, August 13-24.) Dr. William M. Cruickshank, Director, Division of the Summer Session, School of Education.

Wayne University, Detroit, Mich. June 25-Aug. 4. Dr. John W. Tenny, Dept. of Special Education, College of Education.

Scholarships are offered by the Delta Gamma Foundation for training of orthoptic technicians, teachers of partially seeing children, and specialists for blind preschool children. Inquiries may be addressed to the Delta Gamma Central Office, 50 West Broad Street, Columbus 15, Ohio.

### MRS. BRECKINRIDGE RETIRES

With the completion of ten years as executive director of The Eye-Bank for Sight Restoration, Inc., Mrs. Aida de Acosta Breckinridge has announced her retirement. During its first decade the Eye-Bank has received 4,500 human eyes, and trained 70 ophthalmologists in the techniques of corneal grafting. Mrs. Breckenridge will continue as a board member.

### EYE INJURIES from CHRISTMAS TOYS

DAN CURRIE, M.D.

Fayetteville, North Carolina

Ophthalmologists in Cumberland County, North Carolina, have joined in an effort to reduce holiday tragedies—and with good results.\*

DURING the Christmas holidays—that is, from the time schools close until they re-open—eye injuries in children always increase. These injuries not only occur in greater numbers during this holiday period than any other period of the year, but they are exceptionally severe.

Each year for four years four ophthalmologists in Cumberland County have made a combined effort during this critical period to study the problem and to put before the public the dangers connected with the improper use of certain toys, especially those involving missiles. Even miscellaneous eye accidents not associated with projectile toys increase during the Christmas vacation, perhaps because of the renewed vigor with which a child plays upon his release from the daily grind of school. Possibly, too, the preparation for the holiday festivities requires more of the parents' attention than they realize and the children receive less parental supervision in their play. One 10-year-old child playing an improvised game of blind man's buff had his head wrapped in a sweater as the blindfold. Upon its being snatched off his face, a broken button made a linear laceration of the cornea through

\* Reprinted from the North Carolina Medical Journal, Vol. 16, p. 546, November 1955. which there was an avulsion of the torn iris, the lens, and most of the vitreous. The child was not seen by a physician for three days, and by this time panophthalmitis had developed. The eye was enucleated.

Another little girl was struck in the eye with the corner of a wooden penny matchbox. She sustained a V-shaped laceration of the cornea. Vitreous and lens were found in the lower fornix. The ciliary body had been lacerated at each arm of the V. The eye was blind and was enucleated.

These accidents were bizarre. They are described to call attention to the apparently innocuous articles and games that may bring tragic results, as was the case in this study. Most of the injuries had quite ordinary causes: the thrown rock, the fall into winter weed stubble, the broken piece of glass (usually a pane), fence wire.

To some degree these types of accidents could be prevented by the child himself, since most children have been instructed not to play in areas where such objects may be found.

### Types of Injuries

A breakdown of all types of eye injuries that were serious enough to require as much as two weeks' treatment or observation by an ophthalmologist

are listed below. These cover the injuries referred to ophthalmologists in a community of 70,000 people during the 1954 Christmas vacation period. The total number represents a decrease of 30 per cent from that of previous years.

## TABLE 1 Classification of Injuries

| Cause of Injury            | Number |
|----------------------------|--------|
| Air rifle                  | 9      |
| Bow and arrow              | 2      |
| Spring rubber cup pistol   | 2      |
| Miscellaneous              |        |
| Rock                       | 2      |
| Wire                       | 1      |
| Glass                      |        |
| Button of sweater          | 1      |
| Stick (homemade sword)     | 1      |
| Screwdriver (from mechani- |        |
| cal toy)                   | 1      |
| Weed stubble               | 1      |
| Matchbox                   | 1      |
| Total                      | 24     |

Of this total number of 24 severe injuries in which some vision was lost, 7 eyes were enucleated. Injuries not requiring lengthy treatment or resulting in some loss of vision are not included in this report.

Injuries resulting from any missilethrowing toy, from a sling-shot to an air rifle, proved to be most serious. These ranged from traumatic iritis to complete destruction of the globe. The arrow with a metal tip is responsible for the most destructive injury, but arrows with rubber vacuum cups have caused traumatic iritis, and in one case retinal detachment. There is on most toy counters a plastic pistol that has as its projectile a 6-inch stick with a rubber cup. This gun is a favorite of smaller children, and is particularly treacherous because it is considered to be an indoor toy. Two severe injuries resulted from these pistols in the 1954 study. The BB gun, or air rifle, damaged many eyes, but resulted in only one enucleation.

None of these toy weapons is a respecter of persons. The ages of the children treated ranged from 9 months to 15 years. The 9-month-old child was sitting in his mother's lap inside the house when an air rifle pellet entered through the window and struck the baby's eye. This eye was enucleated.

Many of the air rifle injuries resulted from ricochets. In one instance a bullet ricocheted from the wooden target, only 8 feet away, to the sighting eye of the boy firing the gun. Others ricocheted into the eyes of bystanders some distance away. Actual air rifle battles, or cowboy and Indian games resulted in no serious eye injuries, although pellets were removed from the skin of the forehead and lids of the victims.

### Conclusion

This paper is not an attempt to bar the sale of any of the toys mentioned, but to find some practical means of educating the public as to their dangers and as to how they might be used with greater safety. The community from which this report comes is in no wise different from others, since the same toys are available everywhere and children's games and use of the toys are essentially the same. To recite the statistics to the populace in general or to individuals has a modicum of effectiveness; but constant and dramatic presentation of the facts with descriptions of how the accidents may occur has been more helpful.

Methods of giving this information to the public are numerous, and all have merit. Newspaper articles with pictures, spot radio reminders, and television shows are beneficial. A discussion at the November and December meetings of Parent-Teacher Associations probably reaches the most interested people. Arrangements with grammar school principals to have two or three uniformed men (military men or policemen) come to the school and demonstrate the correct use of rifles, pistols, and bows and arrows impress the children. Explorer Scouts and Boy Scouts may also be used for this purpose, as many counties are planning to do this year.

Minor details that may easily be left out of the instructions are important—for example, the preparation of a proper target from which it is impossible for the missile to ricochet. The target should be backed by a bag filled with cotton, sand, or straw. Two injuries in the 1954 report were the result of ricochets from paper targets tacked on boards.

All medical men must share the responsibility of helping Santa Claus complete his mission without leaving a series of tragedies in his wake. The best approach is to instruct children in the use of dangerous toys before Santa Claus comes.

Editorial from the same issue of the North Carolina Medical Journal:

In this issue a very timely article by Dr. Dan Currie of Fayetteville calls attention to the marked increase in eye injuries during the Christmas holidays. The hazards of firecrackers have long been recognized by nearly all except those who manufacture and sell such products. Dr. Currie, how-

ever, has rendered an excellent service in reminding our readers that damage may also be done by relatively harmless toys. Not only ophthalmologists but all doctors would do well to read the article and then warn the parents of young children of the tragedies that may follow the annual visit of Santa Claus.

One practical way in which doctors all over the state can help spread this information is to interest their local newspaper men in publishing an abstract of Dr. Currie's article.

WINGATE M. JOHNSON, M.D.

Editor's Note: The following report on the 1955 Christmas vacation period has been received from Dr. Currie:

Concentrated efforts to bring to the attention of parents the dangers of these toys resulted in a reduction in the number of injuries during Christmas vacation from 24 in 1954 to 10 in 1955, and a reduction in enucleations from seven to two.

### LIGHTING THE HOME

Recommended Practice for Residence Lighting is a publication of the Illuminating Engineering Society, 1860 Broadway, New York 23. (\$1.00). The text is mainly devoted to basic lighting requirements for family activities which involve close vision. Attractively illustrated, it contains much material of value to home dwellers as well as residence architects, equipment and interior designers and educators.

The joys that live and shall never die Are Gifts from God through the human eye The greatest gift at least to me Is just that I have the power to see.

-Anonymous

### The Art of Seeing with Little Sight

ALICIA W. KELLOGG

The author's personal courage and resourcefulness are reflected in this message to those with limited vision. "I have only about eight per cent physical sight," she writes from Birmingham, Michigan, "although it seems to me that I have much more."

O matter what your age, my neighbor with little sight, you most certainly want to live happily and normally. I have found from my own experience that this can be done. The scientific knowledge of the condition of your eyes must come, of course, from eye specialists; . . . physically your eyes need their skill, but psychologically you alone must win the fight with Fear. Fear can so possess you that your ability to think logically is paralyzed and you are frozen to immobility. To overcome fear pray earnestly and then when peace steals through your being, think-and the answers will come to you.

The following suggestions are from my own experiences. They may seem obvious when you are quietly thinking and not in danger; but the fact that the nearly-blind frequently ask me for help in crossing streets leads me to think that these ideas may help you.

Wait until the traffic light has just changed; otherwise don't try to cross—you might not have time. If you can't see the light, the people near you will have stopped; and if there are no people, the cars will have stopped. If you haven't waited for the new light and you are caught in the center of the street, stand perfectly still so that motorists will know what to do about

you. They are usually alert and will stop to let you finish crossing.

If you can't see a curb because it isn't painted and the sun is shining down so bright!y that the curb and street look like one, turn and look down the street and no doubt you will see a building casting its shadow. This will enable you to see the difference between the curb and the street. Watch people, especially their feet, and then do what they do.

I find country roads are dangerous because they are rough to walk on; the traffic lights are few and far between; there are few people, and the cars rush up before I can see them.

You have probably found that going *up* steps presents no problem since the risers cast shadows, making each step distinct. Going *down* is a different matter, however, as there are no shadows and the steps may look like one solid incline. Use hand rails. Never mind if you think you look like a doddering something or other; you have only one neck to break, you know.

As to escalators, going up is no problem at all but going down requires real nerve. I almost fell once, and it was just the other day that I was able to scold myself and conquer my fear, for I was very afraid. With a

grim face and much determination I stood at the head of a down escalator and watched to see how I could solve the problem. I found that by putting my foot on the moving platform which becomes the first or top step, very near to the beginning or stationary part, I didn't have to worry about the rest of the descent. If you do not do this, your foot is liable to land half on one step and half on the other—a precarious situation. I wish escalator manufacturers would paint a white line at the edge of each step; that would help us.

Don't be timid about asking someone to help you if you need it. A simple request with a smile will win anybody. Also—smile warmly if someone offers to help you, even if you don't need it.

I have learned not to be ashamed of my handicap except when I permit it to worry and hamper me and—yes—baffle me. I had to give up my position of many years in a private school because of my poor sight and consequent inability to read. I have now found joy in helping elderly people by being patient with them, kind to them, and most of all by helping them to retain their former dignity as individuals in spite of the handicaps of age. Earning my living in this way is not all of it—I feel rewarded also.

Remember! Pray and think! And—God bless you!

### FIRST EYE BANK IN IOWA

A law passed by the Iowa legislature permitting persons to will parts of their body for medical use has made possible the first eye bank in the state. With the support of the more than 250 Iowa Lions Clubs, the bank was established at the State University of Iowa Medical Center, Iowa City, under the direction of Dr. Alson E. Braley.

### MISS O'BRIEN RESIGNS

Miss Madeline O'Brien has resigned as executive secretary of the Grand Rapids Association for the Blind and for Sight Conservation, effective March 31, and has announced her forthcoming marriage. For the past two years Miss O'Brien has successfully administered the activities of the Association, whose program covers not only prevention of blindness but also services to the visually handicapped. Supported by the Community Chest, its staff includes two graduate social workers, an occupational therapist and a recreation worker.

The Association is now looking for a successor to Miss O'Brien and it is suggested that anyone interested in this post write to Mrs. Fred B. Gray, chairman of the personnel committee of the Association, at 338 Sheldon Avenue S. E., Grand Rapids, Michigan.

#### SAFETY TOGS FOR PEDESTRIANS

A new yarn is being used for outdoor clothes which glows a bright silver under automobile headlights, Safety Maintenance for October 1955 reports. Garments made of this grey thread look like any other except when viewed from a car at night. Then they can be seen from a much greater distance, an important safety factor.

Tests were made comparing the visibility distance of ordinary clothes with those made of "reflective yarn." A driver traveling at 30 miles per hour could see a child in an ordinary snowsuit 100 feet away with low-beam headlights, giving him only 2.2 seconds available stopping time. The same garment made with reflective yarn was visible 525 feet away, allowing nearly 12 seconds margin. A woman wearing a reflective yarn raincoat could be seen at 1,500 feet with high-beam highway lights as against 240 feet for an ordinary garment.

# Infrared and Ultraviolet Transmittance Characteristics of Plastics

NO PLASTIC safety device gives the eyes sufficient protection if they are exposed to harmful infrared rays, says a report issued by the American Standards Association. A special subcommittee of the Association studied the whole range of plastics useful in eye protection to determine their transmissive properties of ultraviolet and infrared rays and visible light.

The report covers three groups of plastics: cellulose derivatives, thermoplastic synthetic resins, and thermosetting resins, and evaluates their general usefulness in resisting heat, chemicals, abrasion and other factors. Their spectral transmission characteristics, here studied for the first time, were examined by a spectrophotometer and two types of spectroradiometers. The results are presented in 106 graphs. It was found that many of the dyes used, especially the greens, if the plastic was thick enough, reduced ultraviolet radiation to a very low value, and also protected the eves from harmful glare.

However, plastics do not absorb sufficient of the near infrared rays, that is, between 800 and 2,500 millimicrons. Here there is an urgent need for a new organic coloring agent with high absorptive qualities. "Unfortunately," says the report, "this is the region of the spectrum in which a large part of the infrared radiant energy of the sun as well as that from industrial welding and cutting operations and other radiant energy exposures is to be found. Metal coating has been found to be effective for the whole infrared

spectral region. Its use, however, is difficult for a number of reasons."

The industrial worker is warned of an intense radiation of infrared because it causes a burning sensation, but lower intensities may severely injure eyes exposed over long periods. The infrared rays are so insidious that the danger is often not recognized. Ultraviolet rays give no warning whatever, and only a few hours after exposure do their effects appear in a conjunctival irritation, "sand in the eyes." The federal specifications for safety glasses used against radiation require almost complete elimination of both infrared and ultraviolet rays.

The report discusses various plastic devices, with cautions against their use in certain cases. Suggestions are offered about sunglasses. They should not be worn after sundown or before sunrise. For outdoor daytime wear, sunglasses tinted in the yellow-green or greenish-yellow part of the visible spectrum are most effective. Vivid green glasses worn by drivers may make them miss a red traffic light, and amber or yellow may reduce the visibility of a blue-green light.

The report, "The Spectral-Transmissive Properties of Plastics for Use in Eye Protection," is available from the American Standards Association, 70 East 45th Street, New York 17, at a price of \$1.50. It has been approved by the Sectional Committee on Heads, Eyes, and Respiratory Organs, sponsored by the National Bureau of Standards; by the U. S. Bureau of Mines; and the Navy Department.

### EYE TRAYS - Contamination and Medication

HEDWIG S. KUHN, M.D.

Hammond, Indiana

In compliance with the law drug houses now use methods of packaging ophthalmic medication that reduce likelihood of contamination in use.

N every recent article on emergency and first aid care of eve injuries in industry or, in fact, in any doctor's office, emphasis is placed on the importance of avoiding contamination of ophthalmic medication and equipment. But until recently little attention has been paid to the fact that such contamination may have tragic consequences. We knew during the war, for instance, that epidemic keratoconjunctivitis (EKC) was actually spread in dispensaries, first aid stations and medical offices, rather than carried from man to man at the work benches. or even in the wash rooms. This was demonstrated in Detroit where all cases of suspected EKC, from any and all industries in the area, were sent to a central clinic for care, and not allowed in the plant dispensaries.

The EKC virus can be "carried" in the conjunctival secretions without producing disease in that person. In other words, if a simple foreign body is removed from a "carrier," and the dropper used is not sterilized before it is used again, the next patient may get EKC. It was through the setting up of such strict measures that Detroit, with its key wartime industries, avoided such massive epidemics as occurred on the west coast, the east coast, and later in parts of the midwest.

### Law Offers Protection

Only in the last few years has the law assisted us in protecting ourselves and our patients by providing bacteria-free ophthalmic medication from drug stores and drug houses. Formerly, when bottles were allegedly boiled and cleaned, there was no penalty involved if solutions were contaminated either in factories or stores. Now there is a law making it mandatory that ophthalmic solutions be sterile.

Efforts have been made by many drug houses to package ophthalmic solutions and ointments in a way that reduces likelihood of contamination after they reach the eye tray. Among such devices employed are sealed plastic dropper-bottles with tips that can be cleaned with alcohol after use; sterile ophthalmic drugs for surgery; "unidose" packaging; disposable plastic droppers; autoclaved disposable

fluorescin strips, and many others. Thus in dispensaries the use of stock solutions, droppers and medicine glasses—always dangerous—can be eliminated.

### **Contaminated Droppers**

It has long been preached, but seldom practiced, that one should never use the dropper out of a stock bottle on an eye tray to put medication into an individual's eye. The practice is being violated because some nurses are insistent that they can drop medicine into an eye without touching any part of it. This claim is simply not true, as *no one* can avoid occasionally touching the conjunctiva, lashes or globe. When this happens, and the dropper is re-inserted in the stock bottle, the result is contamination.

An important procedure in the absence of specially packaged medicine is to sterilize each individual dropper immediately after its use, and also each individual medicine glass holding the topical medication. Hands should be washed before attending each patient, as much for the nurse's or doctor's protection as for the patient's. In spite of the use of sterile droppers and sterile medicine glasses, contamination can occur even in stock bottles on the eye tray that have been opened -we do not know why. Any plant or medical department or doctor's office that sees many foreign body or eye injury cases should culture all ophthalmic solutions on the eye tray at least once a week. We have done this for many years, and in spite of our strict observance of not using stock bottles or droppers we do occasionally find a contaminated solution.

The preparation most quickly contaminated is fluorescin. It is our belief

that having a stock bottle of this product on the eve tray is now improper. Fluorescin that can now be obtained in sealed plastic dropper-bottles is much safer. Also available now are autoclaved strips of fluorescin-impregnated paper designed to be placed near fornix in the lower cul-de-sac, and then disposed of. However, an even greater contribution to the cause of avoiding complications due to contaminated medication is to use less fluorescin. Actually there are very few instances in which a doctor, nurse or aid in a plant dispensary really needs to use it. If a foreign body has been removed there is no need to stain, as one knows in advance that the remaining small abrasion must stain. The proper follow-up after the removal of a foreign body is simply to insert a small amount of ointment (which should not be an antibiotic nor include an anesthetic, and therefore I prefer 30 per cent sulamyd); then ask the patient to report within 24 hours. If good illumination and magnification are available (as they should be) even tiny abrasions of the cornea where a foreign body has struck or lain are visible without the use of fluorescin. So why add the risk of exposure to bacterial infection just out of idle curiosity to see if the cornea stains?

#### Hazards of Antibiotics

Tied very closely into a discussion of actual contamination by external means is the recognition of a new hazard resulting from excessive use of antibiotics in the eye. Ophthalmic antibiotics should not be sold across the counter, nor used promiscuously by general practitioners or in industrial medical establishments. It is felt, and drug houses have encouraged the

thought, that added protection is given if antibiotics are used immediately. Matters work out differently. however. The indiscriminate use of antibiotics has actually increased the danger of serious secondary infection. especially of minor corneal abrasions. One reason lies in the fact that our good old friends, streptococci and staphylococci of low pathogenicity (and other bacteria normally found in eye secretions) are snowed under by the use of antibiotics, leaving the dangerous Bacillus pyocyaneus to emerge unchallenged, without its previous competition. For this dread infection there is no known treatment, and over 90 per cent of its victims therefore have great loss of vision, usually from heavy scarring. Another reason for the avoidance of antibiotics

in industry is the fact that they are heavy ammunition (why shoot sparrows with a cannon) and there is a variety of simple non-antibiotic ophthalmic medication.

One other important matter to remember when dealing with eye injuries in industry and deciding on proper medication: Avoid the use of cortisone with or without an antibiotic. Cortisone retards healing, slows up epithelization of even a tiny abrasion, and exposes it to secondary infection—the one thing we are trying to avoid.

Therefore, by using sterile ophthalmic solutions and avoiding antibiotics and cortisone in industry we can best serve the employees coming to the medical dispensary for care of minor eye injuries.

### MEDICAL TEXTS IN COURT

The following item is reprinted from The Journal of the American Medical Association, March 5, 1955, with permission of the editor:

Evidence: Reference to Medical Textbooks During Cross Examination of Physician.— The plaintiff sued for damages for injuries allegedly received during the course of his employment. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Minnesota.

The plaintiff, a locomotive fireman, stated that while at work on June 20, 1948, he struck the left side of his head and neck, above the ear and back of the temple, a very severe blow on the castings back of the frame of a locomotive engine; that he was momentarily stunned; that his eyes were blurred and burning; that he was very weak and upset; that his neck, head, and eyes were very painful; and consequently that the injury caused acute glaucoma resulting in total blindness. The defendant denied

that the injury, if it even took place, caused the plaintiff's blindness. It contended that the blindness resulted from the fact that the plaintiff had had diabetes for many years and did not care for himself properly. At the trial the defendant called Dr. Hugo Linden Bair as a medical expert witness. Dr. Bair, a graduate of Harvard Medical School, had been a specialist in ophthalmology at the Mayo Clinic since 1934 and had taught the subject in the graduate school of the University of Minnesota for about eight years. He was the plaintiff's attending physician from Oct. 4, 1948, to May 12, 1949, and he testified as to his knowledge of the plaintiff's eve condition. In his opinion the blindness was the net result of a prolonged diabetic retinopathy. Dr. Bair further stated that in his opinion there was no causal connection between the alleged injury and the plaintiff's condition of blindness. Nowhere during this testimony did Dr. Bair say or infer that he was relying on specific medical treatises. On cross examination, however, the plaintiff's attorney asked Dr. Bair if he was aware that three specific textbooks (namely, books by a Dr. May, Dr. Louis Salinger, and Dr. Bernard S. Malloy) stated that acute glaucoma could be caused by injury. Dr. Bair said that he did not recognize any of the named books as authoritative but did not deny that they might contain the statement about injury causing acute glaucoma. Dr. Bair was asked about what books he considered authoritative, and he named the Graefe-Saemisch handbook, Hurze's handbook, Furd's "Gesonnte Ophthalmology," Berens' textbook of ophthalmology, Foster Moore's book on medical pathology, a text by Sir Stewart Duke-Elder, and one by Herbert Parsons. Dr. Bair could not say whether any of these works denied that acute glaucoma could be caused by injury.

The Supreme Court stated that medical textbooks may not be introduced into evi-

dence as substantive proof of the statements contained therein, since they are clearly hearsay (i.e., the textual matter is made by one not under oath and not subject to cross examination). But, such books or portions thereof that disagree with the conclusions reached by a medical expert witness may be referred to in court for the purpose of discrediting the witness's testimony, if the witness has stated that he based his opinion in whole or part on such books or if he stated that he accepts the particular books as authoritative. In the instant case, neither of these conditions were met. Therefore, the court held that the objectionable line of cross examination amounted to prejudicial error.

Accordingly, the Supreme Court reversed the judgment in favor of the plaintiff and remanded the case for a new trial. Briggs v. Chicago, Great Western Ry. Co., 57 N. W. (2d) 572 (Minn., 1953).

### CASANOVA AND CATARACTS

Jacques Casanova, who delighted in exposing charlatans, was once over-critical of an amateur eye doctor groping in the direction of the Ridley operation. As Albert Taieb recounts the incident in Archives d'Ophtalmologie, the great adventurer met a self-styled oculist named Tadini in Warsaw in 1766. Tadini knew about Jacques Daviel's method of cataract extraction announced 14 years earlier before the Académie Royale de Chirurgie. A German oculist long established in Warsaw was still sticking to the barbarous old method of couching for cataract, and Tadini, who was a newcomer, criticized him for not knowing the new procedure.

Tadini asked his countryman Casanova to present him to a lady of quality, one of the German oculist's patients. She had undergone couching, but the lens had returned to its old position. Casanova persuaded her to let Tadini extract the lens, but first she called her oculist into consultation with Tadini. The old German insisted that extraction of the lens would probably result in blindness.

But Tadini claimed to do more than lens extraction. He pulled a box out of his pocket and displayed some little globes of finest crystal. A new lens would be installed to replace the lost one, he said. The German laughed uproariously, the grande dame was frightened away from her project, and Casanova, the go-between, was embarrassed.

Years later he ran across Tadini in Barcelona, wearing a soldier's uniform. The German oculist had hounded him out of Warsaw, he had had no luck with his invention anywhere in Europe, and had enlisted in the Spanish army to keep body and soul together.

"And your crystalline lenses?" Casanova inquired.

"I've given them up," Tadini said, "but I'm sure they'd have worked."

### Your Eye Program—SUCCESS or FAILURE?

### RUSSELL DEREAMER

Consultant—Safety Services
General Electric Company, New York City

When plant managers complain that employees won't wear eye protection it's usually not the employees who are at fault.\*

ODAY in American industry I there are thousands of workers who have been convinced that an eve protection program is good business. A flying object headed straight for a precious eye has been stopped by the protective lens of safety glasses. Nine thousand of these fortunate workers have become members of the Wise Owl Club, an organization sponsored by the National Society for the Prevention of Blindness. A look at the case histories of these club members reveals that an eve injury could occur almost any place, any time. Here are a few examples:

- . . . While grinding a milling cutter, the stop broke and a flying part hit the left lens of the employee's safety glasses.
- . . . Drill broke; a piece shattered the operator's safety glasses.
- . . . Heavy chip flew from lathe and hit safety glasses.
- Lead pot erupted; molten lead covered the lenses of operator's safety glasses.
- Piece flew out of power press and cracked safety glasses.
- \* Presented at the Annual Conference of the National Society for the Prevention of Blindness, New York, March 17, 1955.

- . . . Slug of iron from unknown source struck repairman as he walked through mill room on way to locker.
- Unidentified object dropped from overhead, smashed glasses of employee at assembly work bench.

The serious consequences of an eye injury are ample reasons for an adequate protection program. But aside from this humanitarian consideration, the medical and compensation expense involved in the loss of one eye—\$2,300 to \$14,536, depending upon state compensation laws—makes such a program economically sound.

There are numerous successful eye protection programs throughout industry that are administered according to the best concepts of modern management. But perhaps at this point it would be helpful to review some of the reasons eye protection programs have failed. Then in turn the essentials of a successful program will be discussed.

### Planned Failures

Some programs have been planned failures. Here are some reasons why:

No attempt was made to sell employees on the need for eye protec-

tion or to explain the characteristics and benefits of safety glasses.

Eye protection was provided in one section of the plant but not in another where similar eye hazards existed. Therefore employees in the area where eye protection was provided couldn't understand why they had to wear safety glasses. They were convinced that management was being unfair.

Supervisors didn't wear safety glasses in areas where employees were required to wear eye protection.

Safety glasses were not properly fitted and employee complaints were improperly handled.

Infractions of rules regarding eye protection were ignored.

Long delays occurred between time of employment and arrival of safety glasses.

The experienced supervisor and safety engineer will recognize that the above list is a partial one. Many more reasons for failure could be added. But let's turn to a discussion of the basic principles of a successful eye protection program.

### **Basis for Success**

It is good business to provide employees with necessary eye protection in all operating areas of the plant. Before embarking on a program, the key points for consideration are:

Eye protection should be provided because of known eye hazards.

Employees should be educated to recognize these hazards.

The purpose of eye protection should be understood by employees.

There should be no temporizing with a rule requiring the wearing of eye protection. Once it is provided its use should become a condition of employment.

The last key point is of particular importance. Too often an eye is lost because safety glasses that had been provided are left in a bench drawer, tool box or work-apron pocket. Enforcing the rule on safety glasses is not harsh. Basically it is a demonstration of the supervisor's sincere interest in and concern for the safety of each employee.

Certain basic rules regarding the wearing of eye protection should be followed:

Employees required to work in or to enter areas where eye protection is required should not be permitted access to such areas until the protection has been provided. Those who need corrective lenses may be given temporary protection such as plastic coveralls until prescription safety glasses are ready.

No one, including plant visitors, should be permitted to enter areas where eye protection is required without adequate eye protection. It is common practice for the receptionist to give visitors a pair of safety glasses with the visitor's pass. Inexpensive visitor's safety glasses are now on the market.

Eye protective equipment preferably should be dispensed from one location and individually fitted by a qualified person.

Complaints that plano safety glasses cause headaches and nausea are not uncommon. In some cases the basis for the complaint may be psychological, or it may result from defective vision of which the employee is unaware.

This indicates the value of testing the eyesight of employees systematically and establishing a routine which insures that they secure corrective lenses or medical treatment if necessary. Many companies provide prescription safety glasses without charge.

### Good Example

A report prepared by a safety engineer in an organization with a successful eye protection program provides a fine example of the application of the basic principles that have been discussed:

"Last December, a program to sell supervisors and employees on the wearing of safety glasses in the manufacturing area was instituted. It has culminated with the recent issuing of an amendment to the Employee Safety Instructions which requires all employees to wear safety glasses while in the work areas. The program started with the selling of all supervisors on the need for adequate eye protection. This selling was done in meetings and individual discussions conducted by the plant safety engineer. Finally, when 100 per cent of the supervisors were wearing safety glasses, they became salesmen in selling the eye protection program to employees.

"Along with the selling program, the eyesight of each employee was checked. Persons with indicated defects were asked to contact a professional person. Several meetings were held with employees for the purpose of discussing general safety matters. During these meetings the eye protection program was given prime consideration. Finally, a secret ballot was held to determine the attitude of employees regarding the wearing of

safety glasses while in the plant. The vote indicated 92 per cent of the emplovees favored an eve protection program. An announcement was then made that August first the wearing of safety glasses at all times while in the plant would become a condition of employment. Employees understood that refusal to wear the eve protection required would mean dismissal. Significantly, only one employee refused to wear safety glasses, and he changed his mind after talking the matter over with his wife. Now we feel the wearing of safety glasses has become a symbol of safety in our plant."

### **ROAD SAFETY STUDIES**

Two committees dealing with aspects of traffic safety were appointed at the Paris meeting of the International Council of Ophthalmology on May 7, 1955. One committee will study problems of driver vision: whether roadside billboards distract the eyes of drivers from the road ahead, and whether the placing of roadside objects like telephone poles at regular intervals is dangerous as causing rhythmic stimulation to the retina, and nervous symptoms. The Committee for Standardization of Color Vision will pass on tests for transport workers. At its last meeting the International Federation of Ophthalmological Societies approved the pseudoisochromatic tables for examining color vision, and initially accepted the Ishihara charts. The committee will recommend any new tests considered equally suitable.

### VOCABULARY OF EYE TERMS

Recently added to the NSPB list of publications is a *Vocabulary of Terms Relating to the Eye*. This eight-page "dictionary" includes some 177 terms frequently used in literature relating to the eye in health and disease. Pub. 172; price 10 cents.

### SPERRY'S TEN-YEAR RECORD

### HERMAN SAGER

Optometrist

Eye Service Supervisor, Medical Department Sperry Gyroscope Company, Lake Success, New York

Not an eye lost or seriously injured in a decade is the proud record of Sperry Gyroscope Company. Other notable results of this eye program are increased efficiency and production.\*

THEORIZING as to what an eye program in industry can accomplish is no longer necessary. We have accumulated facts and figures which decisively show the results. These relate, first, to the prevention of loss of sight; second, to monetary savings through curtailment of eye losses, injuries and lost time, as well as through improved visual efficiency.

In a 10-year period Sperry Gyroscope Company has spent \$400,000 for setting up and maintaining its in-plant eye program—an average of \$40,000 a year. Of the 10-year total \$180,000 was expended for professional and technical services; \$190,000 for 38,000 pairs of safety glasses, including prescription and plano types at an average cost of \$5 each; \$30,000 for instrumentation and other miscellaneous expenses.

The number of employees in the plant has varied during this period from 11,000 in 1944 to a low of 7,000 from 1946–48 and a peak of 18,000 in 1953.

In return for the above expenditure the company has enjoyed the following benefits:

\* Presented at the Annual Convention, Greater New York Safety Council, April 13, 1955. Not one eye has been lost in machining or foundry areas since the inception of the program, and not one has been seriously injured, resulting in even partial loss of sight.

Eighty-two pairs of smashed safety glasses which have been accumulated attest to the potential sight loss during this period. Each pair, displayed on various bulletin boards throughout the plant, is considered by a committee (medical director, safety supervisor and eye service supervisor) to have saved one or both eyes from blindness.

The employee whose sight had been saved is then enrolled as a member of the Wise Owl Club. This club is unique. It is made up of employees whose sight had been saved by the safety glasses they were wearing on the job at the time of the accident. We received our club charter in June 1949. By September 1953 we had already enrolled 15 as members. Each one is issued a small Wise Owl pin which is worn prominently on the plant badge. We have found the Wise Owl Club to be an important asset in our educational program of eye safety.

The direct compensation award in New York State for the loss of an eye is \$5,120. Thus the saving represented by the 82 potential eye losses is \$419,840. This amount alone, in only one phase of our eye program, is sufficient to cover the entire 10-year cost. Although such compensation payments are not directly charged to the company, our current insurance rates are based on past accident experience. An increase in accidents and subsequent compensation awards is eventually reflected in increased premiums.

### **Indirect Savings**

It is generally recognized in industry that for every dollar of direct accident cost there are at least four dollars of indirect cost, which in the case of the 82 potential eye losses would total \$1,679,360. Another substantial saving! It is a safe assumption that there were many minor accidents that did not result in damaged safety glasses or facial disfigurement and were therefore not reported. These could have resulted in severe eye injuries and losses.

More important than the economic justification of saving sight is the humane aspect—the prevention of human suffering, involving not only the accident victim but his family as well, for which there is no monetary evaluation.

We have been able to show a 90 per cent decrease in first aid eye cases over the 10-year period, an approximate saving of \$200,000. Before the program was initiated, in the year 1943, six eyes were lost and 56 serious eye injuries were sustained, many resulting in partial loss of sight. In that same year our first aid eye cases numbered 9,560 with an employee enrollment of 11,000. In contrast, 1953 cases numbered 1,094 with an employee enrollment of 18,000.

### **Mandatory Protection**

We believe that the success of our eye program is largely due to tactful and diplomatic enforcement by immediate supervision—foremen, for example. A directive issued in 1944 by the company's president, R. E. Gilmour, establishing mandatory wearing of safety glasses in machining and foundry areas, read in part:

"During the last 13 months, there have been more than 10,000 injuries to employees' eyes in the company. Some of these injuries involved complete loss of sight of an eye, causing much suffering and needless waste which might easily have been prevented.

"The facts have shown that no plant or practically no department is immune from eye injuries. Since we are confronted with a serious safety problem, it is directed that a mandatory eye protective program be established with the following standard practices, as endorsed by the Joint Planning Committee.

"(1) All persons, employees or visitors, while in foundry or machining areas, are required at all times to wear standard eye protection. The foreman or supervisor of each department shall determine, with the approval of the safety department and the cooperation of the safety committee, what constitutes standard eye protection, and shall be responsible for the enforcement of this rule.

"(2) The company will issue such required eye protection equipment to all persons affected by this rule, at no cost to the employee; will keep equipment in repair, and replace—in event of depreciation or damage beyond repair through use."

### Correction for the Job

In addition to the protective phase of the program which has more than paid for itself, important emphasis is placed on vision correction for our shop personnel, and on a program of preplacement vision testing of applicants.

Eighteen thousand eve refractions have been done. A careful study of the various types of work has been made so that corrective glasses, suitable for specific tasks, could be prescribed. The task and the working distance have considerable influence on the type of correction that may be needed for the job. Following the initial refracting of all our shop personnel (at which time we discovered in some departments that as many as 45 per cent had unsatisfactory vision for performing their jobs comfortably and efficiently), we have maintained a periodic re-examining schedule.

As a result of our corrective eve program, management is aware of the high level of seeing ability that is maintained for the shop personnel. This is a vital factor in the precision type of operation conducted at this plant. How much this corrective phase has saved in terms of money and lost eves has been difficult to evaluate. Since our work is not on a mass production basis it is difficult to determine the exact savings in dollars and cents. But we do know from reports of supervisors and foremen that improved visual performance has reduced spoilage and waste and increased production.

In our eye examinations 800 cases of pathology and other anomalous conditions were uncovered and referred for proper medical treatment. The data on these eye conditions has been invaluable for our hospital records.

Special eye examinations are also given yearly to our chauffeurs. These include field and color tests.

### Pre-placement Tests

Thirty-four thousand employees and applicants have been given visual screening tests by means of the Bausch & Lomb Ortho-Rater. This analysis of visual capabilities has greatly improved job placement. The supervisor is aware of the stringent pre-placement vision testing. He knows that the employee placed in his department at least has the visual skill for performing his job satisfactorily. If the new worker is not successful, the supervisor can eliminate vision as a possible deterring factor and seek other reasons.

The Ortho-Rater was also used in the initial phase of our eye program to test all shop personnel and to separate those that required eye examinations from those that had the proper visual skills for the job.

A statistical study of one year's experience in pre-placement vision testing of applicants indicated that 21 per cent failed to meet the established vision standards for the job. For more than 90 per cent of the 21 per cent it was just a matter of obtaining corrective glasses. The applicant is not permitted to begin work until this recommendation is carried out. Twenty-one per cent may seem a trifle high, but the precision type of work performed at Sperry demands high visual standards as compared to most other industries. What the value of this pre-placement vision testing program for applicants is worth is

hard to estimate; it is just another benefit from our type of eye program.

Eye examinations are included in the annual physical examinations of all executive personnel, thereby assuring good eye care for management as well as for shop personnel.

The eye service has been consulted on numerous occasions regarding plant lighting, color contrast painting, magnification, and other optical problems encountered by our engineers. Although the optometrists associated with the program are not expert in these fields, they have been able to make many contributions toward the solution of these problems.

We have proved that blindness resulting from industrial accidents can be completely eradicated throughout the country by means of an enlightened, progressive eye safety program. By accomplishing this industry is not only making a tremendous contribution to society from a humanitarian standpoint but is also improving its financial security.

Sperry management is gratified that the eye service program has achieved results far beyond expectations, and is firmly convinced that its value has not been over-estimated.

### FRIEDENWALD MEMORIAL FUND

In recognition of the profound interest in research and the brilliant accomplishments of Dr. Jonas S. Friedenwald, the trustees of the Association for Research in Ophthalmology announce the establishment of the Friedenwald Memorial Fund. The fund will be used for awards for meritorious research in ophthalmology and related sciences. Contributions may be sent to David G. Cogan, M.D., chairman of the committee for the fund, at 243 Charles Street, Boston, Mass.

### FLASHLIGHT EFFECT ON EYES

The following item which appeared in Queries and Minor Notes, *Journal of the American Medical Association*, January 30, 1954, is reprinted with permission of the editor.

To the Editor:—I am inquiring about photographic flashlight, especially electronic flash, about 1/1,000 second of 16 lumen seconds of light per square feet at 9 feet. Pictures of babies, even newborn infants, are often taken in dim rooms, with the pupils fully dilated and the baby staring at the camera. Can this harm the eyes? M. D., Arkansas.

Answer:—The amount of light reaching the subject has apparently been measured as 16 lumen seconds per square foot and delivered in the course of about 1/1,000 second. Theoretically there is insufficient ultraviolet or infra-red radiation from the standard electronic discharge tube to be harmful to the exterior or interior of the eye, even when the gaze is directed on the light source, unless the intensity is many times greater than that indicated. Nor have any indisputable cases of eye lesions been reported even though current photographic procedures commonly expose the eye to electronic flashes at a distance much closer than 9 feet (about 3 m.). No ophthalmoscopic nor microscopic abnormalities were produced in the eyes of chinchilla rabbits by exposures of more than 2,000 lumen seconds from a discharge tube at a distance of 3 inches (7.5 cm.).

#### BLIND INCREASE IN MASSACHUSETTS

Nearly 800 new names were added to the Massachusetts register of the blind during the last fiscal year, according to *Listen*, published by the Catholic Guild for the Blind. The largest single cause of blindness among the new registrants was diabetes. Retrolental fibroplasia blinded two-thirds of the children of pre-school age.

### WHO Studies Onchocerciasis

The first printed report of the Expert Committee on Onchocerciasis has been issued by the World Health Organization, together with 21 working documents in mimeograph form. At a meeting in Mexico City in November 1953 the Expert Committee agreed on research, clinical and epidemiological programs for controlling the disease.

Onchocerciasis occurs in a large portion of Africa and in certain regions in the Americas, especially southern Mexico and Guatemala. The vector is the same on both continents: the fly Simulium, found in many species, a few of which are anthropophilic. In Africa S. damnosum and S. neavei are the chief carriers of Onchocerca; in Mexico and Guatemala the principal vector is S. ochraceum. There are regional variations even within species, and the Expert Committee urged more entomological study of Simulii.

The fly in biting deposits Onchocerca microfilariae, which form fibrous nodular tumors with encapsulation of the adult worms. As the disease develops the filariae migrate to various parts of the body, often to the eyes.

#### In the Americas

The American form of onchocerciasis attacks the eyes more than the African. It produces a characteristic iridocyclitis, the chief cause of blindness from this disease. Other lesions are a subepithelial punctate keratitis which develops slowly, and conjunctivitis and limbitis. Choroidoretinitis and optic atrophy are also serious lesions, which seem to be more frequent in Africa than in America.

Surveys carried out in various regions of both continents show that Onchocerca infections may occur in from 80 to 100 per cent of the population, and that from 50 to 75 per cent of the cases may show ocular symptoms. Since economic or total blindness often results, the disease is a heavy burden in many rural areas. It is usually extensive and shows a tendency to spread.

### Early Control

Early control of onchocerciasis by excision of the nodules containing the microfilariae may prevent their spread to the eyes. The filariae may be present in the ocular bulb, the anterior part of the eye, and even in the vitreous, and they attack every part of the eve except the lens. The Expert Committee recommended the systematic and early use of denodulization to suppress the source of the filariae and the metabolic products of the adult worm. Excision of nodes does not reduce the incidence of onchocerciasis, but has greatly reduced blindness and other eve lesions.

On the basis of clinical reports from many regions, the Expert Committee was reserved about drug therapy. Hetrazan can be given orally, has a low toxicity, but is not active against adult *Onchocerca*, so that microfilariae reappear in a few weeks. Suramin (Napuride Sodium) is effective but dangerous, and should be used only on hospitalized cases.

Control of the vector is a complicated problem, and methods must differ in line with regional factors. The report warned that total eradication, while desirable, may destroy the ecologic balance of a region. Spraying with DDT or other insecticides may poison fish and kill off the natural predators of *Simulium*. However, control and even eradication of the vector has been obtained in Leopoldville and parts of Kenya and Uganda by DDT spraying, and the Expert Committee decided that similar methods should be applied in affected regions while further research is made in vector control.

The vector breeds as a rule in waterways and has an aquatic stage of about 41 days. Mechanical works such as dams and concrete channels may be built to control the flow of water in order to kill the larvae or modify breeding conditions.

Repellents and protective clothing including head-nets have proved helpful in some areas. As a rule the *Simulii* do not bite indoors or in the dark. It is suggested that certain outdoor labor might be restricted to the season when transmission of the disease is slight.

### SYPHILIS AMONG MIGRANTS

Venereal disease is a grave problem among migrant workers in New Jersey, Dr. David Bergsma, state commissioner of health, reports in *Public Health News* of January 1956. In recent years serologic tests have been given more than 3,000 migratory farm workers each summer. In 1955, 706 persons, or 21.5 per cent, were reactive for syphilis, as against 23 and 25 per cent in the preceding years.

The makeup of the 18,000 migrant farm workers is about half Puerto Rican and a third southern Negro. The state maintains a special program for these workers, sending a mobile unit through the agricultural areas during the peak summer season, and using local clinics to help with screen-

ing and the treatment of those infected. In 1955, 239 persons were treated for syphilis and 118 for gonorrhea.

Other types of migrant workers screened during 1954 showed a high incidence of syphilis. Seasonal workers at the three large race tracks in the state showed a positive reaction to tests in 15 per cent, and incomplete reports from the seafood industries indicated that one migrant worker in three was affected.

The fact that venereal disease is extremely high among newcomers to the state was borne out in the 1954 mass survey of an industrial area in Newark. Dr. Adele Shepard, chief of the bureau of venereal disease control, reported that the 15,000 Negroes in the survey, three-fourths of them recently migrated from the southeastern states, had a reactivity rate for syphilis of 12 per cent as compared with less than 3 per cent among white workers living in the same district. Nearly 30 per cent of the Negro reactors required treatment.

#### WILLS HOSPITAL EXPANDS

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Constantly increasing services for the prevention of blindness are reflected in the 1954 report of the Wills Eye Hospital, Philadelphia. Founded in 1832, this institution has grown into the second largest eye hospital in the world.

During the year there were 86,000 visits to the 15 different clinics, about 5,000 operations were performed, and 11,000 refractions made. The number of eye accidents which occur in a large city is revealed by the fact that 13,000 people were brought in for emergency treatment for lime and acid burns, imbedded foreign bodies, contusions, perforations and laceration of lids, among other mishaps.

### THE PRESCHOOL CHILD AND BOOKS

### LORRAINE GALISDORFER

Teacher of Partially Seeing Children Public Schools of Kenmore, New York

All young children, and particularly those with visual handicaps, profit by adult guidance in developing reading readiness through pictures and stories.

"READ me a story" is an oftenheard request from a small child. To share pre-reading experiences with him, to bring child and books together, requires thought and skill. This is especially true when the child is visually handicapped.

Properly encouraged and directed, the youngster from two to five really enjoys story time; and he needs these looking and listening experiences to enrich his living and learning. The early years determine later success in reading and true enjoyment of it.

Books are an essential part of wholesome living. Making friends with them at an early age helps to encourage self-expression, develop language and vocabulary, acquire information, spark creative thinking and an appreciation of good literature.

Reading or telling stories to the partially seeing child is a contribution to the development of his reading readiness as well as preparation for change in environment from home to school. Many skills related to reading can be acquired during the first five years of life. Learning to listen, looking carefully, remembering and interpreting are parts of readiness. Pictures can be identified; stories can be told through pictures; and the skills of

paging through a book and holding it right-side up can be learned.

### Selecting Books

The selection of books from the wealth of material available for young children is really an individual matter. Format and content naturally influence the entertainment and educational value; however, the child's particular interests should be explored carefully. In satisfying the special needs of the young child with partial vision the following questions should be considered:

Are the pictures clear, and do they tell a story? Are they strongly outlined in bright, contrasting colors, with few details?

Does the content appeal to the interests and experiences of the child? Is it childlike?

Is the vocabulary simple and rhythmic?

Is the design of the book simple? Is the book strongly constructed, to stand wear?

Is non-glossy paper used throughout?

Are the letters large and clear?

Is there ample spacing between letters, words and lines? Are there ample margins?

Is the book of medium size so that the child can handle it himself?

### For the Two-Year-Old

At two, or even earlier, the child likes to point to objects and name them. He may look at pictures in books or magazines and identify familiar things such as a baby, mother, daddy or car. He likes to take part as he talks about the pictures. His attention-span is short so that the reader may stop, talk, use the child's name in the story to keep his interest, or skip if his attention is wandering. Time must be allowed for comments and interruptions, especially when the child asks questions.

What will the very young child want to hear about? His first books should reflect objects and activities of his everyday life—those that are familiar to him. Picture stories in rhyme or verse should include experiences about the house, the family, pets, toys, and cars. The young child loves the sound and rhythm of nursery stories and lots of repetition.

The fours and fives like stories about animals with which they are familiar. They enjoy hearing about things that move and make sound, such as trains, cars and planes.

Many young children enjoy a whole series of stories by a particular author. Among the best-known are: Maj Jan Lindman's Snipp, Snapp, Snurr Series and Flicka, Ricka, Dicka Series, Albert Whitman and Company; Inez Hogan's many twin animal series, E. P. Dutton; True Book Series, Childrens Press; Marjorie Flack's earlier animal series, Doubleday & Co., Inc.; Hamilton Williamson's early series of animal tales; Helen and Alf Evers' series of animal fables. Some of the inexpensive

little books also deserve mention as they make valuable additions to a young child's library. Among the better ones are the *Ding-Dong Schools Books*, Rand McNally; *Little Golden Books*, Simon and Schuster; *Wonder Books*, Wonder Books Inc.; *Book Elf Books*, Rand McNally; and *Treasure Books*, Treasure Books Inc.

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Eventually the child may help to make his own selection of books after he has received adult guidance.

### Story Time

The art of reading a book aloud and discussing its content and illustrations should be achieved by parents and teachers. The attention from an adult will encourage the young child to cherish his first books, Following are some points to be kept in mind:

Sit in a relaxed position so that both reader and child are able to see the book comfortably. Make sure that light is adequate, well-diffused and directed, to eliminate shadows and glare. Hold the book on the level of the child's eyes.

Use a soft, natural, well-modulated tone.

During the reading it may be well to ask questions or explain, comment on pictures, etc. The reader should be familiar with the story in order to know when to omit difficult or nonessential parts, and to summarize.

After reading or telling a story let the child tell it, using the pictures as guides. The pictures should almost tell the story themselves.

Help the child to pronounce words correctly and to use them effectively. Be patient with his questions, and answer them so that he can understand.

Reading enjoyment may be con-

tinued each day in a story period of not more than 15 minutes. The length of time and the amount of reading will vary according to the nature and degree of the child's visual difficulty. Some parents may feel the need for professional advice.

Stories should be read again and again. The child gets just a little at each reading.

### Tell or Read?

Should one tell or read stories to the young child? Varying the method usually creates more interest. The younger the child the more he responds to the informal approach. Certain stories, however, are better read than told: picture stories, when the illustrations are basically a part of the reading; and any tale whose flavor depends on the literary style of the writer. Whether told or read, almost any good story needs repetition. Favorites cannot be repeated too often.

The young child's books should be placed within his reach so that he can easily help himself. As he begins to enjoy them he should learn to take good care of them. Low, open shelves can be made from wooden boxes or orange crates.

#### Other Learning Aids

Making it possible for the child to enjoy early experiences with books is only one way that grownups can help lay the base for reading. The preschool child likes to take trips with the family and observe things. He also profits from listening to recordings—nursery rhymes set to music, stories, and little dance tunes. These two sources of happiness, along with the enjoyment of good books, mean profitable shared experiences for adult and child. What

can be more rewarding than to hear a youngster say, "Tell it again, please!"

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- Huber, Mary. A Child's First Books. The Crippled Child Magazine, August 1950.
- Hymes, James L. Three to Six. Public Affairs Pamphlet No. 163.
- Kepler, Hazel. The Child and His Play. (A Planning Guide for Parents and Teachers). Funk & Wagnalls Co., 1952.
- Lerrigo, Marion O. Learning to Listen. Today's Health, September 1951.
- White, Dorothy. Books Before Five. Oxford University Press, 1954.
- Witty, Paul. How You Can Help Your Child Learn to Read. The Crippled Child Magazine, April 1954.

### POPULAR PICTURE BOOKS

The author has used these successfully with young visually handicapped children. A few of the books may be out of print but should be available in public libraries.

- FOR AGE TWO AND THREE
- Battaglia, Aurelius. Pat-A-Cake. Simon & Schuster.
- Bowman, Charlot. Baby Animals. Grosset & Dunlap.
- Cannon, Wilma. Peter is Sweeter. Lothrop, Lee & Shepard.
- Dentler, Mame. Time to Eat. Albert Whitman & Co.
- Gay, Romney. A Joke on Cinder and Cinder's Secret. Grosset & Dunlap.
- Gay, Zhenya. Look! Viking Press.
- Green, Mary McBurney. Everybody Eats and Everybody Has a House, Wm. R. Scott.
- Grider, Dorothy. Baby's Mother Goose. Grosset & Dunlap.
- Jackson, Kathryn and Byron. Busy Timmy and My Toy Box. Simon & Schuster.
- Jonathan. Daddy and Me. Charles Scribner's.

Kessler, Ethel and Leonard. Plink, Plink! Doubleday.

Logan, Elizabeth D. My First Ride and My First Walk. Samuel Gabriel & Sons.

McKay, Ruth. Just Like Me. Abingdon Press.

Moncure, Jane Belk. Pinny's Day at Play School. Lothrop, Lee & Shepard.

Riess, Val. Baby's Playthings. Grosset & Dunlap.

Skaar, Grace. What Do They Say? Wm. R. Scott.

Ticktin, Cele. Baby's Day. Grosset & Dunlap. Tresselt, Alvin. A Day With Daddy. Lothrop, Lee & Shepard.

Williams, Garth. Baby Animals. Simon & Schuster.

Wood, Ruth. Baby's First Words. Grosset & Dunlap.

Woodcock, Louise. This is the Way the Animals Walk. Wm. R. Scott.

Wright, Ethel. Saturday Walk. Wm. R. Scott.

### OTHER STORIES AND VERSE

Bannerman, Helen. Little Black Sambo. Albert Whitman & Co.

Gay, Romney. Big Picture Book. Grosset & Dunlap.

Hader, Berta and Elmer. The Farmer in the Dell. Macmillan.

Hader, Berta and Elmer. Picture Book of Mother Goose. Coward McCann.

Hutchinson, Veronica S. Chimney Corner Stories. Minton, Balch & Co.

Stevenson, Robert Louis. A Child's Garden of Verses. Charles Scribner's Sons.

Wright, Blanche Fisher. Real Mother Goose. Rand McNally.

### ANIMAL STORIES

Barr, Catherine. The Runaway Chimps. Oxford University Press.

Crowell, Pers. What Can a Horse Do? McGraw-Hill.

Flack, Marjorie. Ask Mr. Bear. Macmillan.
Francoise. Biquette, the White Goat and Jeanne-Marie Counts Her Sheep. Charles Scribner's Sons.

Hitte, Kathryn. Lost and Found. Abingdon. Krauss, Ruth. The Happy Day. Harper.

Lenski, Lois. The Little Farm. Oxford University Press.

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Leonard, Rachel. Funny Bunny. Simon & Schuster.

Lewellen, John. The True Book of Farm Animals. Childrens Press.

Podendorf, Illa. The True Book of Animal Babies and The True Book of Pets. Childrens Press.

Polak, Johan. The True-to-Life ABC Book. Grosset & Dunlap.

Preston, Hall, and Barr, Catherine. The Bear Cub's Escape and Snoop Waits for Dinner. Oxford University Press.

Skaar, Grace. All About Dogs, Dogs, Dogs and Nothing But Cats, Cats, Cats. Wm. R. Scott.

Slobodkin, Louis. Our Friendly Animals. Vanguard Press.

Slobodkina, Esphry. The Wonderful Feast. Lothrop, Lee & Shepard.

Stewart, Elizabeth Laing. Billy Buys a Dog, Funny Squirrel and Patch. Reilly & Lee Co.

Tensen, Ruth M. Come to the Farm and Come to the Zoo. Reilly & Lee Co.

Tresselt, Alvin. *Hi*, *Mister Robin* and *Wake Up Farm*. Lothrop, Lee & Shepard.

Ward, Lynd. The Biggest Bear. Houghton Mifflin.

Woodcock, Louis P. The Smart Little Boy and His Smart Little Kitty. Wm. R. Scott.

#### VEHICLES AND TRAVEL

Barr, Jene. Fireman Fred. Albert Whitman & Co.

Friskey, Margaret. Mystery of the Broken Bridge. Childrens Press.

John and Jane. Jolly Blue Boat. Childrens Press.

Lenski, Lois. The Little Airplane, The Little Auto, The Little Fire Engine, The Little Sail Boat and The Little Train. Oxford University Press.

Miner, Irene. The True Book of Policemen and Firemen. Childrens Press.

Schlein, Miriam. How Do You Travel?
Abingdon Press.

Tresselt, Alvin. Follow the Road. Lothrop, Lee & Shepard. ABOUT OTHER CHILDREN

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Beim, Jerrold. Andy and the School Bus. Wm. Morrow & Co.

Faster, Doris Van Liew. *Tell Me Little Boy*. Lothrop, Lee & Shepard Co.

Francoise, Noel for Jeanne-Marie and Springtime for Jeanne-Marie. Charles Scribner's Sons.

Koch, Dorothy. I Play at the Beach. Holiday House.

Lenski, Lois. Cowboy Small and Papa Small, Oxford University Press.

MacGregor, Ellen. Tommy and the Telephone. Albert Whitman & Co.

Mariana. *Doki* (The Lonely Papoose). Lothrop, Lee & Shepard.

Moon, Grace and Carl. One Little Indian.
Albert Whitman & Co.

Russell, Betty. Funny Boots. Albert Whitman & Co.

Thayer, Jane. Where's Andy. Wm. Morrow & Co.

Weisgard, Leonard. My First Picture Book. Grosset & Dunlap.

Zion, Gene, and Graham, Margaret Bloy. Hide and Seek Day. Harper & Bros.

NATURE STORIES

Burgess, Thornton. *Picture Story Book*. Garden City Books.

Krauss, Ruth. The Carrot Seed. Harper & Bros.

Miner, Irene. The True Book of Plants We

Know. Childrens Press.
Thorn, Samuel, and Brouillette, Jean. Let's

Go. Beckley Cardy Co.
Thorn, Samuel, and Harbeck, Irene. Let's
Find Out. Beckley Cardy Co.

Tresselt, Alvin. Follow the Wind and Rain Drop Splash. Lothrop, Lee & Shepard. Zion, Gene. All Falling Down. Harper.

### TELEVISION PROGRAMS ON EYE HEALTH

Two new television scripts-with-film programs featuring eye care have been released by the American Medical Association for the use of local medical societies. Prepared with the cooperation of the National Society for the Prevention of Blindness, these

features are provided with scripts to be narrated by a local physician.

One program, "A Clear Picture", deals with the eye and its functions, and "Wonderful Spectacle" describes the functions of glasses and lenses. The 15-minute films can be used separately or as a combined half-hour presentation. The demonstrator is Dr. Brittain F. Payne, ophthalmologist, of New York City.

Agencies wishing to have the programs televised in their area can request them through their local medical societies. Films and scripts are available without charge through the AMA TV Library.

## TEACHING THE WHOLE CHILD

"The modern health educator is not merely screening for vision or caries or tuberculosis. While he manipulates his Snellen chart or any other device he is gathering evidence, to be sure, but he is potentially exploring for personality variations related, for example, to vision, and if glasses are fitted they may do vastly more for the pupil-patient than restore 20/20 eyesight. 'Mind' and 'body' disappear as recognizable realities and in their stead comes the acknowledgment that a boy, a whole being, stands before you to be dealt with in accordance with whatever contribution you can make to him."

Delbert Oberteuffer, Ph.D., in the Journal of School Health

April 1953

### CITY OFFERS GLAUCOMA TESTS

The Philadelphia Department of Public Health has opened a testing service for the detection of glaucoma which is open to all persons over 45 years of age. The program was worked out in cooperation with the Committee on Public Health and Preventive Medicine of the Philadelphia County Medical Society. There is no charge for this test or for other health center services for prevention of disease.

# NOTES AND COMMENT

# • Eye Banks Federated

A loose federation of 12 eye banks in this country, including Alaska, was formed during the 1955 meeting of the American Academy of Ophthalmology and Otolaryngology. Dr. Frederick C. Cordes, commending this move in an editorial in the January 1956 American Journal of Ophthalmology, expressed the hope that this union would permit the exchange of information and the setting up of certain standards of procedure.

In addition, Dr. Cordes wrote, "it may help to prevent some of the undesirable publicity that has been associated with corneal transplantation." He cited the case of one organization soliciting funds and eyes for research in the prevention of blindness. The appeal said, "Our recent discovery of a cure for detached retinas will prevent blindness from that cause to all persons everywhere, forever! . . . this method is now free to the whole world. No one need go blind anymore anywhere because of a detached retina."

### Cataracts and Rubella

Rubella may cause serious fetal damage in the first eight weeks of pregnancy, D. L. Brawner of Atlanta reports in the *Journal of the Medical Association of Georgia* of September 1955. In the spring of 1952, during an epidemic of rubella, 26 pregnant women contracted the disease. In seven the rubella occurred during the first two months of gestation; three gave birth to normal children, one infant was stillborn at seven months, and three babies showed anomalies. Of these one had congenital heart dis-

ease and multiple facial anomalies; another had harelip, cleft palate and congenital heart disease; and the third had bilateral cataracts.

Of the eight women who contracted rubella between the eighth and twelfth week of gestation only one gave birth to a damaged child. Attacks of the disease even later in pregnancy had mild fetal effects, and none occurred when it was contracted in the last trimester.

### Illinois Sets New Goals

The Illinois Society for the Prevention of Blindness is celebrating its fortieth anniversary by setting up a six-point program for eliminating preventable blindness in the state. As the result of the Society's past efforts, two blinding diseases—trachoma and ophthalmia neonatorum—have been wiped out in Illinois, better eye care has been made available to its citizens, and a model law for the control of fireworks is on the statute books.

The Society has alerted all hospitals and doctors in the state to the dangers of oxygen therapy as causing retrolental fibroplasia in premature babies, and vigilance against this tragic disease will continue. The Society is now conducting a study with the aid of the state Department of Health to find means of preventing RLF completely.

Building up contributions to the Illinois Eye Bank, and alerting all citizens to the dangers of glaucoma, are high on the Society's program. It has established a glaucoma clinic, and furnishes a full-time medical social worker to help patients seeking eye care. Having pioneered in vision screening of school children, the Society

ety can count among its accomplishments the fact that half the Illinois school children are now screened every two years. The goal is to have all the children screened annually. The Society trains 1,200 volunteers every year in screening technique, and in the budget for 1956 43 per cent is allotted to the school program.

# · Injury Cases in Court

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In two recent cases appealed to a higher court employer negligence was held responsible for eye injuries to employees. The Oklahoma Supreme Court awarded a disability of 75 per cent to a woman who received injuries in both eyes, stating that the employer had failed to comply with the statute requiring proper safeguards for hazardous occupations.

An appellate court in California awarded damages of \$44,200 to a railroad employee whose injury caused a retinal detachment in one eye. He had been sent to move a pile of steel couplers heaped carelessly on a concrete floor. A coupler fell and broke off a piece of concrete, which flew into the employee's eye. The court ruled that the employer had been negligent in allowing the couplers to be piled dangerously high, and in sending the employee to move them.

# • Eye Safety in Navy

The sight conservation program which the Department of the Navy carries out in such installations as a great aircraft plant is described by Lieutenant Buther L. Newman (MSC) in the Medical Technicians Bulletin of September-October, 1955. As a preliminary step the Navy's visual consultant makes a survey of all working areas in conjunction with

the safety engineer and the industrial medical officer. These three men agree on designating certain shop areas and job positions as eye hazardous.

The Navy supplies all personnel working in these areas with refractive services and safety glasses. Civilian and military employees are given a careful screening by the visual consultant and a specially trained technician who has the ability to make adjustments and repairs. In some areas where several thousand employees are wearing safety glasses a full-time civilian specialist makes the rounds of the various shops and checks each pair of safety spectacles on the spot. Where this system is not followed the employees are urged to avail themselves of adjustment and repair services offered by Navy personnel.



"Whatever made you take up umpiring?
Your sight is perfect!"

—Journal of the American Medical Association Martin Filchock, cartoonist The visual consultant contributes his knowledge of the physiology of vision to obtain proper lighting of work areas. It has been determined that virtually all industrial jobs require at least 75 foot candles for assembly work, and 200 foot candles for prolonged tasks requiring speed and accuracy.

# Delaware Expands Program

The Delaware Commission for the Blind has greatly expanded its activities for eye health. During 1955 the importance of eye care was widely publicized in lectures, literature, and press and radio campaigns.

Drs. Davis G. Durham and William O. LaMotte, Jr. have been added to the consultant staff long directed by Dr. Emil R. Mayerberg. The Commission has made a statewide drive to get all who need eye services to the clinics and if necessary to the hospitals for surgery. The cooperation of hospitals and oculists throughout the state has made it possible for needy patients to obtain free care. Service clubs, especially the Lions, have in several instances borne the expenses of a patient needing prolonged medical care.

# Spectacle Lens Tester

The National Bureau of Standards has developed an instrument which accurately measures the marginal as well as the central powers of a lens. The tester was designed by Dr. F. E. Washer of the Bureau staff to evaluate lenses for the Veterans Administration.

The tester consists of a short-focallength lens representing the optical system of the eye, a horizontal microscope, and two collimators. In examining about 300 lenses from various sources it was sometimes found that lenses having identical power at the optical center varied as much as 0.50 diopter in the marginal areas, and this variation changed as the object distance increased.

The spectacle tester is too elaborate for routine use, and its essential principles have been used to design marginal-power attachments which will fit any standard power-measuring instrument. These attachments include a small hemispheric seating surface with a central opening, a clamping device to hold the lens under test against the hemisphere, and a prism device to bring the emergent light beam into the field of the observing telescope.

# · "Greeley Disease" in Iowa

An epidemic of the new type of conjunctivitis, called "Greeley" for the Colorado town where it first appeared, has broken out among students at the University of Iowa. Dr. A. E. Braley, head of the Department of Ophthalmology at the University, said that about 20 cases of this virus disease had appeared, and so far the source of infection had not been traced. He reported that the conjunctivitis was associated with a sore throat and a temperature that might run to 104 degrees, and lasted two or three weeks.

This type of conjunctivitis, called pharyngoconjunctival fever by Phillips Thygeson, first appeared in 1951 in this country, and epidemics have been reported from the District of Columbia, New York, Maryland, Missouri, Utah and California. So far it has not been recognized abroad. Dr. Thygeson reports that the virus has been isolated, and belongs to the APC group. It is nonpathogenic for the ordinary laboratory animals, but will produce

the disease in human volunteers. It is a "swimming pool" type which usually attacks children in epidemic form.

# Virginia's Special Classes

The education of blind and partially seeing children in Virginia has become a major problem because of the inroads of retrolental fibroplasia. In its report for the year ending June 30, 1955, the Virginia Commission for the Visually Handicapped asked for an increase of eight home teachers, two supervisors of sight-saving classes and two ophthalmologists to expand blindness prevention work.

The sight-saving program of the Commission is now beginning its thirtieth year. Special classes for partially seeing children are maintained in five schools in Richmond, three in Roanoke and one each in Arlington and Norfolk. The policy is to integrate the handicapped children as closely as possible into school life, and accordingly they do much of their work in the regular classes and are encouraged to share in social activities.

### NEW DRUG ENDANGERS EYES

Serious retinal damage resulted from the use of a new drug NP 207 used experimentally on neuropsychiatric patients at the City County Hospital of Houston, Dr. Everett L. Goar reported in a letter to the *American Journal of Ophthalmology*. Of 33 patients given the drug 22 developed signs of retinal disturbance.

Three or four weeks after the drug was started vision became blurred, and quickly dropped to 20/200 or hand movements. The retinal vessels became dilated, there was a severe narrowing or annular scotoma, followed by pigment clumps spreading over the retina. Only a slight recovery followed the discontinuance of the drug.

Dr. Mary Fletcher, senior resident in ophthalmology at Jefferson Davis Hospital, discovered these cases and followed them carefully. Similar reports of visual impairment from NP 207 have come from Chicago and from Switzerland.

# PEEKABOO, I ALMOST SEE YOU

Middle-aged life is merry, and I love to lead it.

But there comes a day when your eyes are all right but your arm isn't long enough to hold the telephone book where you can read it.

And your friends get jocular, so you go to the oculist,

And of all your friends he is the joculist, So over his facetiousness let us skim,

Only noting that he has been waiting for you ever since you said Good evening to his grandfather clock under the impression that it was him.

And you look at his chart and it says SHRDLU QWERTYOP, and you say Well, why SHRDNTLU QWERTYOP? and he says one set of glasses won't do.

You need two.

One for reading Erle Stanley Gardner's Perry Mason and Keats's "Endymion" with,

And the other for walking around without saying Hello to strange wymion with.

So you spend your time taking off your seeing glasses to put on your reading glasses, and then remembering that your reading glasses are upstairs or in the car,

And then you can't find your seeing glasses again because without them you can't see where they are.

Enough of such mishaps, they would try the patience of an ox,

I prefer to forget both pairs of glasses and pass my declining years saluting strange women and grandfather clocks.

### OGDEN NASH

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# AROUND THE WORLD

### DENMARK

RLF in Copenhagen. Since 1952 a Copenhagen hospital has restricted oxygen therapy for premature infants to grave emergencies and thereby halted the incidence of retrolental fibroplasia. An article by P. Braendstrup and E. W. Flensborg abstracted in the Journal of the American Medical Association of November 12, 1955, reports that of 228 premature infants in the hospital between 1950 and 1954. 31 cases of RLF developed. In 16 the condition reversed, six of the babies have become blind, two have reduced vision, and seven have permanent eve changes without functional significance. Slight irreversible changes occurred after five days in oxygen, and retinal degeneration reducing vision after two weeks of supplemental oxygen. Comparison of the earlier period of routine oxygen with the later one when this therapy was restricted showed clearly that RLF was induced by oxygen therapy.

### FINLAND

Glaucoma Tests in Helsinki. Screening tests given 600 patients over 64 led to a diagnosis of primary glaucoma in 28 cases, of which 15 were detected for the first time. In a report published in Geriatrics of August 1955 Dr. M. Koskenoja of the University Eye Clinic, Helsinki, and Dr. Esko Orma of the Research Center for the Aged comment on the need of routine tonometry for older people of Finland. A survey by M. Vannas in 1935 indicated that 22.5 per cent of the totally blind and 14 per cent of the partially blind had primary glaucoma.

In the Helsinki screening by tonometer, field and provocative tests the subjects were 174 men and 426 women from the geriatric out-patient department and the city home for the aged. About a fourth of the group had had eve examinations within the last two years, so that the percentage of 2.5 for previously undetected cases appeared high. Besides the 28 cases of primary glaucoma, 9 borderline cases and 4 cases of secondary glaucoma were found. The incidence was highest between the ages of 66 and 71, and women were more susceptible than men, roughly one woman in 20 showing primary glaucoma as against one man in 30.

The overall incidence of 4.6 per cent may well be higher outside the city, which has half the country's oculists but only a tenth of the population. Even in Helsinki glaucoma is apt to be discovered too late. Dr. A. Oksala, investigating glaucoma patients treated at the University Eye Clinic between 1942 and 1953, found that 58 per cent were already blind in one eye at their first examination, and only a fourth of them had nearly normal vision in the better eye.

### **FORMOSA**

Night Blindness Pandemic. An estimated 80 per cent of the Nationalist forces on the island suffer from night blindness, according to a Washington dispatch from George Dixon to a newspaper syndicate. A mission of specialists from Fitzsimons Army Hospital in Denver has gone to Formosa to combat the situation. This mission, which includes ophthal-

mologists, nutritionists and laboratory researchers, has found that the nyctalopia, which affects a large percentage of the population, is due to Vitamin A deficiency. Recommendations have been made for a change in the Formosan diet to include readily available fish liver oil and other foods rich in Vitamin A.

Another American medical team will leave soon for Pakistan, where similar conditions exist.

### GREAT BRITAIN

Miners' Eye Troubles. Reduction in the incidence of miners' nystagmus and "coal ulcer," but an increase in eye injuries from accidents, were reported by a symposium of three ophthalmologists whose papers were published in the *Transactions* of the Ophthalmological Society of the United Kingdom for 1954.

Dr. Dorothy Campbell agreed that the dominant cause of miners' nystagmus was deficient illumination, but discussed other factors: neurosis, nutrition, economic conditions and stress. She said it was not uncommon to find high myopia, hyperopia and gross defects of binocular vision among those certified for nystagmus. A great improvement has been made in methods of examination, so that today perhaps one per cent of miners with oscillations are still working underground as against 25 per cent in 1919.

Poor nutrition, especially the lack of proteins, was an important element in nystagmus, Dr. Campbell said. In 1952 only a fourth of the coal miners she examined had an adequate diet. She believed that stress was largely responsible for the fact that twice as many miners were certified in 1943, during the war, as in 1939. They were

trying to do their work with a greatly reduced labor force, and could not stand up to the strain.

Mr. W. J. Wellwood Ferguson stated that there was no strict correlation between the improvement in nystagmus and the increase of light available to the coal miner. No official figures of the number of cases certified were available after July, 1948, when 641 miners were receiving compensation as against 2,006 in the peak year of 1943, but there was evidence that the downward trend was continuing.

However, there had been a steady increase in accidental injuries of all kinds, and eye injuries involving loss of time for three days or more had risen from 6,724 in 1938 to 11,058 in 1949. Meanwhile the labor force had diminished.

Dr. G. I. Scott discussed the great improvement during the last 25 years in visual damage caused by hypopyon ulcers of the cornea. In 1929 "coal ulcer" involved enucleation in 9 per cent of the cases, and 39 per cent of the patients ended with less than 6/60 vision. Improved sanitation and conditions in the pits and early hospitalization gradually brightened the picture, and the introduction of sulfonamides made a dramatic change. By 1952 there were no enucleations due to ulcers, and 95 per cent of the patients gained vision of 6/60 or better.

### INDIA

Silver Jubilee. The Association for the Prevention of Blindness of Bengal marked its twenty-fifth anniversary in a meeting held in Calcutta on November 10, 1955. Dr. H. C. Mookerjee, Governor of West Bengal, presided at the jubilee, held at the Eye Infirmary of the Medical College Hospitals.

Governor Mookerjee said that the incidence of blindness in India was much greater than the census figures indicated. Half of it was curable, he stated, and 42 per cent was preventable. He stressed the need for mobile dispensaries to serve the villages.

Sri S. Banerjee, vice-president of the Association, reported that since independence its work has been handicapped for lack of funds. Though the inspiration for setting up the Association came from a foreigner it flourished with the help of native Indians, and he hoped that more generous support from the public would make possible a wider program for the prevention of blindness.

Surgery Given Thousands. Sir Henry Holland, a pioneer medical missionary, described his simplified methods of cataract surgery at the 1954 meeting of the Ophthalmological Society of the United Kingdom. His paper, printed in the Society's Transactions for 1954, showed a high percentage of success despite crowded conditions and a minimum of nursing care.

Sir Henry went to India about 1900 and built up a large hospital at Quetta and clinics at Shikarpur and Kharpur. He was the first to establish annual eye camps for the mass treatment of patients. For the last forty years surgeons from America, Europe and India have been invited to the clinics, and most of them have done from 150 to 200 cataract extractions during a stay of three or four weeks.

At the Shikarpur clinic the staff of five surgeons recently performed 3,000 operations, of which 1,672 were for cataract, in a period of 59 working days. The intracapsular method is the preferred one, and no stitches are

taken, Sir Henry said. He found that the less the eye was handled the less trauma resulted. Out of the 1,672 cataract extractions only one primary infection resulted, though at the clinic there is no preparatory prophylaxis. Just before surgery the eye is irrigated with a strong disinfectant, and when the dressing is applied, penicillin ointment and sulfathiazole powder are put in each eye.

The use of this disinfectant and administration of a general anesthetic to nervous patients are regarded as sheet anchors of technique in the clinics. Because of the very small nursing staff, patients are not immobilized, and each one is required to bring a relative or attendant to prepare his food and care for him. In 70,000 cases of cataract surgery Sir Henry said he could not recall any serious complications arising from this procedure.

Mr. R. I. Buxton, a visiting surgeon at the Shikarpur clinic in 1937, paid a tribute to Sir Henry Holland as one of the greatest medical missionaries in the world. He had seen Sir Henry examining two or three hundred outpatients on a busy day, using half a dozen different languages, and sending those selected for operation to squat on the floor around the operating theater. When the Quetta hospital was destroyed by the 1935 earthquake, which killed 30,000 people in three seconds, Sir Henry, himself injured, set to work and built a magnificent new one.

### JAPAN

Trachoma on the Wane. Statistics compiled by Professor Yasushi Nakamura of Tokyo and issued by the WHO Expert Committee on Trachoma show that strides have been made in con-

trolling the disease. As a basis for comparison the incidence of trachoma at age 20 among men called up for military service declined from 231 per thousand in 1909 to 64 in 1943. A mass survey of students made by the Department of Education in 1953 included 14,000 young men of 20, who showed an incidence of 17 per thousand.

Unlike countries where trachoma is particularly rife among young children, the Japanese type reaches its maximum between the ages of 8 and 15. When screened in 1949, kindergartners aged three to six had a morbidity of 1.5 per cent for boys and slightly less for girls in relation to the school population of that age group.

The Board of Education survey of 1953 screened 1,220,000 boys and 1,058,000 girls. In the 6 to 12 age group the percentage of trachoma among boys was 5 and among girls was 6. Boys aged 12 to 15 had an incidence of 6 per cent as against 7 per cent for girls. In the 15 to 20 age group more males were affected: 2.9 as against 2.7 per cent.

There was wide variation between sections of the country. In the 6 to 12 age group the Aomori district had an incidence of 15 per cent for boys and 18 per cent for girls. Among the general population of all ages in certain remote areas, 20 to 30 per cent have trachoma.

### MADAGASCAR

Triple Threat to Eyes. Alcoholism, syphilis and tuberculosis have so saturated the native population of Madagascar that the island has a unique pattern of ocular pathology, according to an article by Dr. J. Goulesque in the Journal D'Ophtal-

mologie Sociale. Congenital cataract has an incidence similar to that in other countries, but there is more infantile glaucoma and buphthalmia. Ophthalmia neonatorum is becoming a rarity due to a tardy introduction of the Credé prophylaxis, followed by antibiotics and the sulfonamides.

### NEW ZEALAND

RLF Curbed in Auckland. A report by G. de L. Fenwick, summarized in the October 1955 American Journal of Ophthalmology, discusses retrolental fibroplasia in the experience of two Auckland hospitals. In one there was an incidence of 23.7 per cent among babies whose birth weight was four pounds. In this hospital oxygen, antibiotics and parenteral fluids were given infants routinely. The other hospital used no oxygen therapy and had no cases of RLF.

The first hospital has now reduced supplemental oxygen with a resulting reduction of RLF.

### COLOR AS STIMULANT

The psychology of color as a factor in safety and morale is being used effectively in industry, according to an item in the National Safety News for November 1955. A large steel plant has just completed a threeyear experiment in color dynamics, using a chromatic scheme to stimulate its employees. The results attributed to this regime, applied gradually as buildings and equipment were repainted, were remarkable. Disabling injuries were reduced by 38 per cent, absenteeism went down from five to less than two per cent, and labor turnover from 4.5 to 0.4 per cent. Production efficiency rose from 86 per cent in the first year of the color program to 96 per cent in the third year.

# CURRENT ARTICLES

Mortality Rates in Glaucomatous Subjects. G. Bennett. A.M.A. Archives of Ophthalmology, Vol. 54, p. 637. November 1955.

There is a persistent belief that glaucoma is not a primary ocular disease but a manifestation of some generalized vascular disorder. Glaucoma is often found associated with cardiovascular disease. If this disease has a higher incidence among the glaucomatous than in the general population, they should show a shorter than average expectation of life.

A study was made of 105 cases of chronic simple glaucoma and 33 of the congestive type in patients operated on at the Eve Hospital of Southampton, England, over a 14-year period. The patients ranged from 40 to 90 years in age, with 103 of the 138 in the group between 55 and 80 years. The mortality among all these glaucomatous patients was compared with that of the general population of the same age groups, and no significant difference was found. Ocular conditions among the surviving were comparable to those in the patients who died. Thus it appears that glaucoma patients do not suffer from any excess of the normal aging process or of lethal vascular disease.

Screening for Glaucoma. F. M. Foote and V. S. Boyce. *Journal of Chronic Diseases*, Vol. 2, p. 487. October 1955.

The incidence of glaucoma is increasing with the life span. This disease now blinds one out of eight persons, and exists unrecognized in an estimated million persons over 40

years of age. Because of its insidious onset, persons in this age group should have an eye examination, including tonometry, as a routine precaution. g

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Mass screening has been carried out in various communities, with good results in revealing unsuspected cases. Tonometry would be valuable for routine use among hospital admissions and industrial groups. It should be as accurate as possible, since suspected cases can only be diagnosed finally by a long and expensive series of tests.

A new screening method, the visual field multiple pattern test, is rapid, requires no medication, and can be used by a technician. It has revealed latent field defects confirmed by more thorough procedures, and deserves further experimental use.

The hereditary factor in glaucoma makes it advisable in mass screening to encourage the families of glaucomatous patients to have the tests and to follow up those over 40 who are related to persons picked up in such surveys.

Chronic Simple Glaucoma: Hereditary Aspects. W. H. Havener. American Journal of Ophthalmology, Vol. 40, p. 828. December 1955.

The ophthalmologist can expect to find an additional case of glaucoma for every five known patients simply by taking a family history. The dominant inheritance of chronic simple glaucoma was illustrated in a pedigree traced from one patient, which comprised 73 individuals and went back to 1797. Because of early deaths few members of the second

generation reached an age to show symptoms of glaucoma; and the fifth and sixth generations were too young to exhibit the disease.

A woman of the second generation transmitted glaucoma to half her children, who became blind. In turn, almost half the offspring of these affected individuals have so far exhibited glaucoma. For the third generation as a whole, seven blood relatives lived beyond the age of 60, and of this number five suffered blindness of gradual onset. In two cases the author diagnosed glaucoma as the primary cause, and the rest are believed to be of similar origin.

Patients with glaucoma should be advised of its hereditary nature so that their affected relatives may receive the benefits of early diagnosis and therapy.

Uveitis in the Contralateral Eye Following Cataract Extraction. B. Kronenberg. American Journal of Ophthalmology, Vol. 40, p. 205. August 1955.

A seldom recognized form of uveitis may develop in the unoperated eye after extracapsular extraction of a cataract in the other eye. It is of the utmost importance to distinguish this reaction from sympathetic ophthalmia and a coincidental uveitis, since prompt removal of the lens is the only way to save the eye.

Sympathetic lens-induced uveitis may appear months or even years after cataract extraction in the fellow eye. It appears to be a clinical entity. From the four cases here described and others in the literature it consists of the following findings: the operated eye showed no inflammatory reaction; the affected eye showed a marked

ciliary congestion, with heavy and numerous keratic precipitates of the granulomatous type which frequently coalesced to form a membrane; timely removal of the lens led to a rapid quiescence of the condition and the obtaining of useful vision.

This uveitis appears to be allergic; skin testing with lens protein has demonstrated sensitivity in some persons. Evidently when such persons absorb lens matter left in the eye after cataract extraction they are sensitized to their own lens protein. When there is a rupture in the lens of the unoperated eye the extruded lens matter would cause a violent reaction.

The reported cases were presumably unilateral, but it is possible that the operated eye had a fleeting attack of mild uveitis which was not detected during the postoperative period.

Some Methods of Improving Pediatric Care of Newborn Infants. H. H. Gordon. New York State Journal of Medicine, Vol. 55, p. 2648. September 1955.

Various aspects of the pediatric care of newborn infants are discussed. In dealing with retrolental fibroplasia in premature babies, the problem is to determine the amount of oxygen needed to give maximum survival and minimum RLF. A study was made of 103 infants weighing less than 1.5 Kg. on admission to the premature nursery of the Johns Hopkins Hospital for an 18-month period beginning March 1, 1953.

Oxygen therapy was restricted during the entire period, and the 52 babies who survived spent an average of seven days in oxygen. More than half of them were removed by the fifth day. Only one infant developed RLF after

a bad start in life and 17 days in oxygen. Even the 11 very small babies weighing less than 1,000 grams on removal from oxygen on the third to fourteenth day showed no signs of RLF.

The 51 infants who died had all been continuously in oxygen since admission, and all but three had displayed apnea, cyanosis, convulsion, or other signs during their first day of life. Because of this fact there is now a standing order at Johns Hopkins and also at the Sinai Hospital of Baltimore to give all small infants 30 to 40 per cent oxygen for their first day instead of for 48 hours as formerly. Gradual removal from oxygen after this initial period is made as soon as medically indicated. It is hoped to decrease the amount of oxygen still further, and perhaps to use lower concentrations for the initial resuscitation. Further studies of both toxicity and utilization of oxygen would appear indicated.

Myopia of Prematurity. M. C. Fletcher and S. Brandon. American Journal of Ophthalmology. Vol. 40, p. 474. October 1955.

A study of myopia in premature infants in its relation to retrolental fibroplasia and to the immature eye was made from April 1950 to October 1954 in 462 infants born in Houston hospitals. Of these babies 136 had RLF, the incidence ranging from 6 per cent of those with birth weights over 2,000 gm. to 64 per cent of infants weighing less than 1,000 gm. at birth.

It was found that all premature infants had a high and fluctuating myopia. Those with normal fundi, weighing more than 1,700 gm. at birth, had a mild degree of myopia which as a rule became normal by the age of six months. Infants weighing

less than 1,250 gm. at birth had immature eyes and a myopia from -10 to -20 diopters, which stabilized near zero only when the child was about a year old.

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The infants who developed RLF tended to have a high myopia which might remain as a residual of the disease. As a rule, the more severe the RLF the more severe the myopia. Several infants with a severe RLF exhibited a myopia of -10 to -20 diopters for 10 weeks or more early in life, and after a drop to near normal the high myopia returned and continued for two years or more while the infant was under observation.

A significantly higher degree of myopia was found among babies who had RLF. In a group of 22 myopes aged six months to four years all but one had had RLF, most of them severe RLF, and 90 per cent of them weighed less than 1,500 gm. at birth.

The mechanism producing myopia in premature infants appears to be associated with the immature eye and the underlying metabolic disturbance in RLF. This disturbance may produce changes in axial length, corneal curvature, and index of refraction, causing myopia.

Studies on Developing Retinal Vessels. III. Role of Sympathetic Innervation in Oxygen Vaso-Obliteration. C. Cook and N. Ashton. British Journal of Ophthalmology, Vol. 39, p. 626. October 1955.

The mechanism by which oxygen exerts an obliterative effect on developing retinal vessels is as yet unknown. The present sum of experimental evidence suggests that:

(a) the influence is exerted locally through the evolution or destruction of some factor or factors within the immature retina itself;

(b) the effect is confined to the immature retina because of its peculiar metabolism;

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(c) the retina is vulnerable to hyperoxia through its structural and functional relationships to the choroid.

Before exploring this hypothesis it was necessary to rule out the possibility that vaso-obliteration might be controlled by a central mechanism involving the sympathetic nervous system. Various experiments were made on 12-day-old kittens exposed to 70-80 per cent oxygen after sympathetic innervation was eliminated. Cervical sympathectomy had no effect on the immediate or delayed phases of vaso-obliteration by oxygen. Dibenamine used for adrenergic blockade did not affect the delayed phase of oxygen vaso-obliteration.

These findings agree fully with those of Patz, and indicate that sympathetic innervation is not involved in oxygen vaso-obliteration.

Cerebral Palsy: A Practical Routine for Discerning Oculomotor Defects in Cerebral Palsied Children. G. P. Guibor. The Journal of Pediatrics, Vol. 37, p. 333. September 1955.

Ocular defects exist in more than 50 per cent of cerebral palsied children, but they are rarely treated early enough to prevent degeneration of vision. These oculomotor anomalies—strabismus, conjugate deviations and nystagmus—not only result in visual loss but they often prevent the child from developing hand and eye coordination and general motor ability.

It has been demonstrated that the ability to recover from eye defects is much greater in the infant than in the adult. Early treatment of these conditions will develop vision and may improve the general coordination of patients with athetosis or ataxia.

Since eye defects should be considered in the training program for cerebral palsied children, simple tests are suggested for detecting them. When found, the child can be referred to a specialist in children's eye diseases. The corneal reflection test for the detection of strabismus and the motility test for finding conjugate deviations are described. The "E" test for visual acuity should be used at 10 instead of 20 feet for testing young cerebral palsied children.

Eye Injuries in Children. J. S. Crawford. Canadian Journal of Public Health, Vol. 46, p. 64. February 1955.

A survey of eye lesions in children is based on accident cases treated at the Hospital for Sick Children, Toronto. Injuries caused by contusions, foreign bodies, lacerations and burns are discussed. Hyphema, frequently seen in children, has been successfully treated in the hospital by patching both eyes and keeping the patient quiet to prevent further hemorrhage. Glaucoma resulting from massive hemorrhage may lead to blood staining of the cornea, and it may be necessary to evacuate the blood by paracentesis.

Many eye injuries from BB-guns are seen at the hospital, and the education of children to the danger of air rifles is urged. Protective goggles worn in manual training classes where sanding or grinding is being done would prevent other ocular injuries.

First-aid care is essential in lacerations of the lids and globe. Sterile dressings should protect the wounds while the child is on the way to the hospital. Torn lids should be repaired during the first few days after injury to prevent deformity. Lacerations of the eyeball itself require immediate treatment and prophylaxis by antibiotics and tetanus toxoid to prevent further injury. To prevent herniation the injured eye should be immobilized, which is best accomplished by covering both eyes. The prognosis is usually doubtful, and sympathetic ophthalmia is a threat.

Screening for Defects Among School Children. E. Davens. Journal of Chronic Diseases, Vol. 2, p. 409. October 1955.

Health screening of Maryland school children has followed the trend away from rapid mass examinations to a system of more careful diagnosis and follow-through. There is emphasis on careful daily observation by the teacher, who alerts the public health nurse to suspected defects. Once or twice a year the teacher and nurse together appraise the health of each child in great detail.

The Washington County School Health Demonstration has relied entirely on teacher-nurse referral, except for the routine examination of first-graders by the school pediatrician. Ninty per cent of these referrals were found justified by the pediatrician.

Teacher observation is an integral part of vision screening, and provides a subjective check against the objective findings of the Massachusetts or Snellen tests. The teacher notes in the cumulative health record of each pupil such signs as crusted lids, squinting, rubbing of eyes and holding the head to one side. A practical problem in vision testing is the attitude of some

parents and some physicians to needless referrals. Since they are unavoidable with present methods of screening, it is helpful to remember Scobee's suggestion to doctors: "The manner in which the ophthalmologist handles the needless referral can make a big difference in the relationships between family and school."

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Characteristics of Suppression in Strabismus. A. Jampolsky. A.M.A. Archives of Ophthalmology, Vol. 54, p. 683. November 1955.

Suppression of part of the binocular field to avoid diplopia is an extremely subtle and alterable property. It exists only under the precise conditions of ordinary everyday vision, and conditions for testing should simulate these. The usual clinical testing situations are so complex that confusion results.

In concomitant strabismus the region of suppression is an egg-shaped area bounded on one side by a vertical line through and including the macula, and on the other by the "zero measure point." In esotropia this region is confined to the nasal retina and in exotropia to the temporal. Clinically these hemiretinal functional differences are of utmost importance, and may help the orthoptist and the surgeon in the treatment of strabismus.

The ability to establish new patterns of suppression is greatly diminished after the age of six. Adults through orthoptic training may erase areas of suppression in the mind's eye, but not manage to build up new patterns and attain fusion.

The author discusses clinical methods of measuring suppression by the simplest possible procedures. A handheld Risley prism is useful for measur-

ing the extent and depth of the region of suppression, and various haploscopic tests fill out the clinical picture. It takes time to suppress an image, and this latent period gives the examiner time to examine and determine relative localization. If the target is presented to the deviating eye for a brief flash exposure, there is no suppression of either similar or dissimilar targets, and the relative localization is not altered.

Under binocular conditions with similar targets the one before the deviating eye is suppressed, but if a dissimilar target is substituted before the deviating eye there is no suppression. This is a frequent though not invariable phenomenon, which merely confirms the fact that suppression in the binocular visual act is related to form and contour but may be unrelated to size, color, illumination and other components of vision.

Qualitative differences exist between esotropia and exotropia as regards regional sensorial anomalies, but these differences are independent of the presence or absence of anomalous retinal correspondence, which is probably only one of the characteristics of suppression. When suppression is established during visual infancy, anomalous retinal correspondence may or may not develop as part of the suppression phenomena.

Patterns of Visual Defects in Children. N. L. McNeil. British Journal of Ophthalmology, Vol. 39, p. 688. November 1955.

A statistical study was made of 1,220 children aged from one to 15 years who attended the school ophthalmic clinic in a Yorkshire city of 75,000. The 1,066 of school age repre-

sented 8.5 per cent of the whole school population. Most of them were referred to the clinic after a routine medical inspection which included a vision test.

Excluded from the findings were 1.591 children no longer attending the clinic. Nearly half had been dismissed as normal, and the rest, with a variety of ocular troubles, were treated elsewhere. Thus the figures given do not reflect the true morbidity, but represent a minimum average for the age groups of the area. Of the 1,220 children studied 424 had strabismus and 796 various refractive errors, Agespecific morbidity rates showed a consistently greater female morbidity, and a general increase in morbidity with increase in age. Girls aged eight to nine had a seven per cent morbidity as against six per cent among the boys. At age 14 to 15 the girls' rate was 16 per cent and the boys' 13 per cent of the school population in that age group.

Children with squint reported to the clinic early; 300 before the age of five. However, there was a lag in the discovery and treatment of other defects, notably astigmatism, and most of them were diagnosed when the child was between eight and nine years. The 796 children with refractive errors showed 245 cases of myopia, 301 astigmatism, 141 hypermetropia, and 109 anisometropia.

The myopes comprised 20 per cent of all cases of visual defect at age eight, and 40 per cent at age 13, and the peak incidence was between 11 and 12 years. Astigmatism was found in nearly 40 per cent of the children with refractive errors. Anisometropia often went unsuspected for years, resulting in some degree of unilateral

amblyopia. There were 46 cases of amblyopia connected with anisometropia and 98 with strabismus. More boys than girls were affected, and they were more severely affected. This fact may be connected with the girls' greater tolerance to corrective regimes.

Because children often conceal a relatively small visual trouble, earlier and more careful screening is needed to reveal defects. Many teacher hours are wasted in trying to educate children with substandard vision.

Thirty Years' Vision Testing on College Entering Classes. A. E. Orlando. Optical Journal and Review of Optometry, Vol. 92, p. 35. December 15, 1955.

A review was made of the reports of vision tests routinely given students matriculating at the City College of New York during the last 30 years. These students form a homogeneous group, as virtually all are graduates of the city's high schools.

Data were compared for students entering college in 1925 and each decade following. In 1925 and 1955 about 60 per cent of those examined were classed as normal, whereas in 1935 the percentage was 47 and in 1945 it was 53. There was an apparent decrease in myopia from 1935 on, the percentage declining from 43 to 34. It was significant that hyperopes entering the college needed glasses or a change in prescription more than myopes; in 1955 about a third of the myopes were in want of correction, while among the hyperopes only 21 were wearing glasses and 22 needed to wear them.

Since undetected hyperopes must do their high school work under conditions of eyestrain, closer supervision of secondary school pupils is indicated. The ordinary vision test using the Snellen chart is not sufficient in revealing this condition, and an examination by an eye specialist is necessary.

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Unequal Corrected Visual Acuity as Related to Anisometropia. A. Jampolsky, B. C. Flom, F. W. Weymouth and L. E. Moses. A.M.A. Archives of Ophthalmology, Vol. 54, p. 893. December 1955.

Unequal refraction or anisometropia is of clinical importance, especially in regard to its correction in early child-hood. The present study investigated the relation of corrected visual acuity to certain refractive differences between the eyes of the pair. Statistical analysis was made of about 200 private patients under 55 years of age, selected as showing no apparent pathology, no opacities of the media and no strabismus, but all having anisometropia of at least 1.00 diopter or astigmia of 1.00 diopter or more in one eye.

All the statements in this report thus apply to a highly selected sample and not to the general population. The outstanding finding was the strikingly high incidence and high values of unequal corrected acuity (aniso-oxyopia) in hyperopes as compared with myopes. This fact suggests that in children, few of whom wear glasses at an early age, the two eyes of myopes usually develop normally, while in hyperopes one eye often fails to develop fully.

Unlike the general population in which there are more hyperopes than myopes, in this sample there were 139 myopes and 70 hyperopes. Among the myopes 102 showed iso-oxyopia against a statistically expected 83, and

37 of them, rather than the expected 56, showed unequal corrected acuity. In contrast, 23 instead of the expected 41 hyperopes had equal corrected acuity, and 47 instead of the expected 28 showed aniso-oxyopia.

The corrected acuity of the worse eye in the hyperope falls with the increase of ametropia more rapidly than the acuity of its better fellow, or for either the better or worse eye of the myope. In consequence, the average corrected acuity of hyperopic eyes is lower than that of myopic eyes. Low corrected acuity tends to be characteristic only of the worse eye of the hyperopic nonstrabismic pair.

Sorted according to ametropia differences between meridians and astigmia differences, hyperopes showed a marked and statistically significant tendency toward lower corrected acuity in the eye with the greater astigmia or the greater ametropia in the vertical or horizontal meridian. This tendency was much less marked among the myopes.

The study threw no direct light on the etiology of aniso-oxyopia in non-strabismic patients. The dynamics of this condition could be made clear by a study of a large number of children from before the age of six to stable adult conditions. There is evidence that if the eye is deprived of clear images in early stages of development, at least before the age of six years, acuity seldom reaches normal levels. This so-called "amblyopia of arrest" may have been a factor in the present cases.

If both eyes are myopic in different degrees, there exists for each eye a distance at which a clear image may be obtained without accommodation. For the hyperope no object at any distance may be clearly imaged without accommodation. For both near and far objects enough accommodation will probably be invoked to give a clear image in the less hyperopic eye, and its fellow will never enjoy clear images. The hypothesis of accommodative posture in anisometropia which has not had early refractive correction is appealing, though other factors such as suppression, aniseikonia and optical effects may be involved.

If aniso-oxyopia appears to develop at a critical period in childhood, it would seem desirable to shift some of the customary concern from myopes to hyperopes, and correct unequal refraction, particularly if astigmia is involved.

Ophthalmologic Findings in Children Under Foster Home Care. Helen M. Wallace, Myra Palmer, Walter S. Schachat, and Herbert Rich. American Journal of Public Health. Vol. 45, p. 1147. September 1955.

A group of 252 infants and young children cared for by the Foster Home Division of the New York City Department of Welfare was given an ophthalmologic evaluation in 1952 by the Bureau for Handicapped Children of the Health Department. About 88 per cent of the children were nonwhite; 65 per cent were born out of wedlock: 20 per cent had at least one parent with active or arrested tuberculosis; about 22 per cent had at least one parent diagnosed as mentally ill: and most of the group came from the lowest economic part of the population. One or more parents of 10 per cent had a history of venereal disease.

Ophthalmologists at five of the Bureau's eye clinics examined the children and reported 78 (31 per cent)

had visual defects. In the infant age group under two years, the preschool and school-age groups the percentages of visual abnormality were 24, 30 and 51. Roughly three-fourths of the children had refractive errors, and defects of muscle function ranked second in frequency. Two cases of dacryostenosis, two of optic atrophy, and one each of blue sclera and retrolental fibroplasia were reported. Refraction or ophthalmic treatment was provided the children.

A Lens to Encourage Simultaneous Macular Perception. K. E. P. Olmstead. American Journal of Ophthalmology, Vol. 40, p. 419. September 1955.

A new method of restoring vision in an amblyopic eye in strabismus has been used successfully in 50 cases. A diffraction lens was devised to reduce the visual acuity in the preferred eye by one or more lines of the Snellen chart below that of the poorer eye in order to encourage binocular perception.

A diffraction grating is incorporated in the spectacle lens to form a diffused retinal image in the preferred eye, but still an image so well-defined that it cannot be ignored. As a rule the diffraction lens is ordered after the reclaimed acuity has held 20/30 or better for several months of total occlusion. Total occlusion is continued for viewing television and in the evenings, but is gradually eliminated. Surgery is done at the indicated time during this period. Preferably the child should wear the diffraction lens until he is over 12 years of age.

The lens is cosmetically clear, and is readily accepted by patients and parents. It has proved effective in encouraging continuous concurrent use of both eyes, and has practically eliminated the need for periodic resumption of total occlusion.

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Bacteriology of the Healthy Conjunctiva. C. H. Smith. British Journal of Ophthalmology. Vol. 38, p. 719. December 1954.

During the last fifty years the bacterial flora of the conjunctiva has changed, partly due to the use of antibiotics, and new resistant strains are developing. A survey was made of 5,000 persons admitted to two London hospitals for clean surgical procedures. It was hoped to determine what antibiotics would be useful in pre-operative sterilization of the conjunctiva. Since most of the cultures were made in 1950-51, the aureomycin-chloramphenicol group was not tested, and acquired antibiotic resistance was restricted to penicillin, streptomycin, and the sulfonamides.

The cultures taken showed that both pathogenic and non-pathogenic organisms have decreased since the surveys of Rymowicz in 1902. It was found that 25 per cent of the patients showed pathogens. Staphylococcus strains of all sorts composed a third. and C. xerosis 31 per cent. When tested against antibiotics resistant strains were evident. Only one pathogen, a strain of B. proteus, was insensitive to all the antibiotics used. But one in six of the staphylococci was resistant to penicillin, though these strains at the period under review were all sensitive to streptomycin or aureomycin. More recent cultures not reported in the present study showed an increasing number of strains becoming resistant to the newer antibiotics.

Because of the increasing frequency

of Gram-negative bacilli, it is recommended that pre-operative drops should contain an antibiotic active against these organisms, possibly a combination of penicillin and streptomycin, or of polymyxin and bactricin.

Amino Acid Elements of Normal Human Aqueous Fluid Protein. Wolfram Keup and Rainer Steiger. British Journal of Ophthalmology, Vol. 39, p. 503. August 1955.

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Composition of the amino acids present in aqueous protein has not previously been reported. The authors, of the University Eye Clinic, Zurich, made a qualitative and quantitative determination of these elements by a complicated procedure.

All 15 amino acids for which determinations were made by chromatography were found to be present. Their values, compared with those in the serum and in the lens protein, showed considerable disparities in glutamic acid, lysine, arginine and alanine. Since the lens has no vascular supply it takes the elements of protein synthesis from the aqueous alone. Whether the serum protein or the free amino acids are used in this synthesis is as yet unknown.

Quinine Amblyopia: Treatment by Stellate Ganglion Block. Louis Glick and Joyce Mumford. British Medical Journal, July 9, 1955, p. 94.

A case is reported of a woman who was completely blind for about 40 hours after taking a half ounce of quinine to produce an abortion. Ophthalmic examination showed extreme pallor of the optic disk and of both retinas, with narrowing of the smaller vessels. In order to produce vasodilation, drug and vitamin B therapy was

tried without success. However, stellate ganglion block reduced the vascular spasm and initiated a prompt return of central vision. The block was repeated daily for five days, and two months after the amaurosis began visual acuity and visual fields were nearly normal.

It is suggested that the ganglion block method, which is described, should be carried out immediately in cases of retinal vascular spasm and especially in thrombosis of the central retinal vein and embolism of the central retinal artery. It is further suggested that the sale of quinine be put under restriction because of the risk of blindness and deafness in persons sensitive to the drug. The authors believe it is possible that unexplained cases of congenital blindness or deafness may sometimes be due to quinine taken by the mother during pregnancy.

Therapeutic Studies in Experimental Chemical Injury of the Cornea: I. Calsufhydryl (Hydrosulphosol) Studies. Gustav C. Bahn and James H. Allen. A.M.A. Archives of Ophthalmology, Vol. 54, p. 22. July 1955.

This investigation is part of a systematic survey to determine the efficacy of new methods of treating chemical corneal injuries. In four experiments rat eyes were burned with 0.1 N hydrochloric acid and treated with calsufhydryl (Hydrosulphosol) in castor oil, concentrate, or aqueous solution. The left eye was used as a control. The drug proved to have no beneficial effect.

In another series of four experiments the eyes were burned with 0.1 N sodium hydroxide, and in these cases the drug had no effect or a deleterious one. Subsequent reports will deal with the results of experiments employing other burn agents: nitric, sulfuric, and iodoacetic acids, ammonium hydroxide and calcium oxide.

Chlorpromazine Hydrochloride in Intraocular Surgery. A. B. Nutt and H. L. J. Wilson. British Medical Journal, June 18, 1955, p. 1457.

In 80 operations for glaucoma, cataract, and corneal grafting a mixture of chlorpromazine and pethidine was used as sedation, with excellent results. The main advantages of the method are: (1) no cooperation is required from the patient during the operation or for several hours afterward, especially valuable in surgery on elderly or nervous patients; (2) it produces a low-tension eye ideal for intraocular surgery; and (3) the recovery period is extremely tranquil.

The Use of Topical Hydrocortisone in the Treatment of Inflammatory Lesions of the Cornea, Sclera, and Conjunctiva. E. H. Steffensen. Annals of the New York Academy of Sciences, Vol. 61, p. 561. May 1955.

Hydrocortisone acetate suspensions and ointment have been used topically for the last four years in the treatment of anterior segment eye lesions. Several clinical reports indicate that it is slightly more effective than cortisone. Topical administering has obvious advantages. There is no danger of systemic effect, regardless of the duration of treatment, and its use does not require hospitalization.

The lesions of the anterior segment which respond favorably to topical hydrocortisone include several forms of keratitis, chemical or thermal burns, phlyctenular and marginal ulcer keratoconjunctivitis, nodular scleritis, episcleritis, and allergic conjunctivitis. The etiology of several of these lesions is unknown, but all are inflammatory. Some of them are truly allergic, and others may be caused by focal infection mediated through a hypersensitivity in ocular tissues.

Hydrocortisone suppresses inflammatory reactions in these tissues. It seems effective in some allergic conditions such as allergic conjunctivitis due to pollen sensitivity. It is as effective clinically as cortisone in suppressing neovascularization, which is a dangerous complication in corneal lesions. It also inhibits fibroblastic proliferation, and has done much to prevent symblepharon in chemical or thermal burns.

The hormone has no effect on purely trophic or degenerative lesions of the eye, and it will not prevent the recurrence of certain lesions. The etiology of these is still to be sought and cured. It should be emphasized that hydrocortisone, like cortisone, reduces the body defense mechanisms to bacterial invasion. It should never be used in lesions known to be bacterial or viral in origin unless an effective antibiotic is given concurrently.

Clinical Observations on the Effect of 3, 4—Dimethyl—5—Sulfanilamido Isoxazole (Gantrisin) in Trachoma. George El Bayadi. Bulletin of the Ophthalmological Society of Egypt. Vol. 47, p. 211. 1954.

Use of the sulfanilamide "Gantrisin" in trachoma was tested in 45 cases selected from patients at the University Hospital and from private practice. It was possible to follow 25 of these cases for several months and assess the results. The cases included trachoma I, II, and III, trachomatous

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pannus, and trachomatous ulcers. In all cases the secondary infection was first treated with Gantrisin, which was rapidly effective.

Marked subjective improvement in all the treated cases appeared in five to seven days. Both bulbar and palpebral conjunctivae quickly regained their normal color. There was marked improvement in the discharge, the trachomatous ptosis, and the gritty sensation. Stage I trachoma with small follicles was almost completely resolved within two or three months. Those cases with large follicles and papillae took about twice as long. Cases with pannus or ulcers responded better when Gantrisin was given both orally and in instillations.

Nutritional Amblyopia: A Study of American Prisoners of War in Korea. John H. King, Jr. and Jack W. Passmore. American Journal of Ophthalmology. Vol. 39. p. 173. April 1955.

A detailed study on 22 soldiers suffering irreversible amblyopia after imprisonment during the Korean War was made at Walter Reed Army Hospital. The site of the pathology in this disease has always been a question. Use of electroretinography, evidently for the first time in this field, suggests that the involvement is largely in the retina.

Most of the men in the study had been captured early in the war when dietary conditions were especially bad. From October 1950 to the summer of 1951 the food was limited to cereals. All the patients had suffered a marked loss of weight, and the majority had beriberi, diarrhea, and symptoms of vitamin deficiency. Vitamin B<sub>1</sub> deficiency appeared to be the critical factor.

Characteristically the amblyopia developed after approximately 11 months of deprivation. Rodger and Pohlman have made similar observations. The typical findings in the chronic state of the disease were reduced vision, bilateral pericentral or paracentral scotomas averaging about five degrees in size, and temporal pallor of the optic nervehead.

Investigation with the electroretinogram (ERG) threw some light on the question as to whether the original lesion in the disease is one primarily affecting the optic-nerve fibers or the receptor elements and ganglion cells in the retina. From the findings the authors concluded that in a large percentage of cases one site of the pathology is in the retina and suggest rod and cone involvement. The ERG results also suggested that the optic atrophy, as evidenced by pallor and atrophy in the disk, is ascending.

Corneal Infections After Cortisone Therapy. Yukihiko Mitsui and Jun Hanabusa. British Journal of Ophthalmology. Vol. 39. p. 244. April 1955.

The authors, of Kumamoto University Medical School, Japan, found that fungus infections of the cornea may follow the topical application of cortisone or hydrocortisone. Four cases of hypopyon keratitis due to a fungus and one case due to *Pseudomonas* are described. In all five the infection appeared one or two weeks after beginning cortisone therapy.

A study of the propagation of fungi in the conjunctival sac after therapy of this sort showed the incidence of fungi to be 67 per cent, while in control cases it was only 18 per cent. Since these infections cannot be controlled by antibiotics so far available they may terminate in the loss of useful vision. Periodic bacteriological examination of the conjunctiva before and during treatment may be wise.

Sedation for Ophthalmic Surgery: Combination of Chlorpromazine, Promezathine, and Pethidine. R. A. Burn, D. A. B. Hopkin, G. Edwards, and C. M. Jones. British Journal of Ophthalmology, Vol. 39, p. 333. June 1955.

A combination of chlorpromazine, promezathine and pethidine as sedation for ophthalmic surgery under local anesthesia was given 89 patients ranging from 23 to 91 years in age. In all cases, except two for strabismus, the advantages of this technique were unquestionable. Muscular relaxation, complete absence of apprehension or tenseness, and minimal bleeding provided conditions for surgery much better than those offered by barbiturate sedation, and postoperative recovery was very satisfactory.

Of the operations, 41 were for cataract, 11 for glaucoma, 12 for retinal detachment, and the rest for a variety of conditions. The sedation was given by intravenous or intramuscular injection.

Ophthalmologic Manifestations in Deficiencies of Liposoluble Vitamins A, D and E. P. Desvignes. Paper presented at the Congress of the Pan-American Association of Ophthalmology, São Paulo, June 1954. Arquivos Brasileiros de Oftalmologia, Vol. 17, p. 173. 1954.

In reviewing the large volume of work on vitamin deficiency in ocular disease it may be of interest to draw tentative conclusions and indicate possible reasons for conflicting findings. It is clearly established that vitamin A deficiency causes xerophthalmia and nyctalopia and other eye troubles, which can be produced experimentally, and that unless the lesions are irreversible they can be cured by adding vitamin A to the diet. Beyond this much, there are few proved data.

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Vitamin A plays a basic role in corneal-conjunctival metabolism, and in the biochemical mechanism of night vision. It is to be hoped that when its local metabolism is better understood useful therapies can be found for troubles such as dyschromatopsia and retinal degenerations for which there is as yet no effective treatment. The role of vitamin A in daytime and color vision needs more study. Vitamin A deficiency is not consistently found in such diseases as blepharoconjunctivitis and pemphigus, and here the trouble may be a local disturbance in the metabolism of the vitamin. Retinitis pigmentosa may be related to the deficiency of an enzyme necessary for the local metabolism of vitamin A, preventing its conversion into rhodopsine.

We do not yet know the normal action of vitamin D. It has been suggested that D deficiency is connected with the formation of cataract, with keratoconus, strabismus, retinitis pigmentosa, and infantile glaucoma. We do know that toxic amounts of vitamin D provoke hypercalcemia and sometimes a keratinization of the corneal epithelium. In rats given massive doses of viosterol and deprived of vitamin A xerophthalmia develops far more rapidly than it does if vitamin A alone is withheld. However, viosterol has been effective in treating tubercular diseases of the eve.

Vitamin E deficiency seems to pro-

voke ocular lesions of various sorts, but the findings are not consistent, nor does therapy with alpha tocopherol give uniform results.

The interaction of the liposoluble vitamins is important; each is indispensable to normal biochemical function. It is essential that the vitamins be presented to the organism in the same titer as proteins, lipids and glucides in a normally balanced regime. Overstrict regimes imposed to correct a metabolic trouble may become dangerous if prolonged.

The Impact of Boxing upon the Visual Apparatus. James Hamilton Doggart. AMA Archives of Ophthalmology, Vol. 54, p. 161. August 1955.

Blows falling tangentially upon the cornea may cause lesions of the outer and inner eve. The latter occur in bewildering variety. The iris may display single or multiple ruptures, or be detached and lie free in the anterior chamber. Iridocyclitis, phthisis bulbi, dislocated lens and cataract are not uncommon in boxers. The literature records numerous cases of retinal detachment, often inoperable. Cystic and pigmentary changes at the macula are another tragic outcome of blows upon the eye, and retinal hemorrhages are more common than many people realize.

Choroidal hemorrhages are even more destructive, and may cause what might be called cauliflower choroids. A choroidal rupture may involve the macula. Optic atrophy and recurrent congestive glaucoma are potential dangers to the boxer.

Injuries to the neighboring structures may result in ptosis, loss of ocular motility, divergent squint, and diplopia. Whiting's patient, Bill Softly, complained, "I see two chaps in the ring and I hit the one that isn't there and the one that is there hits me."

Head injuries may cause latent impairment of the brain. Even relatively light blows on the head have caused hemorrhage and reactive fibrosis of the brain. The literature is full of cases of traumatic encephalopathy: slurred speech, poor memory, disordered equilibrium, paranoia, and appalling personality changes. Maitland (1928) estimated that sooner or later nearly half the professional boxers displayed a brain defect. Gene Tunney, after being punched into a mental twilight for three days, left the ring, as he said, to avoid permanent brain injury. His decision should be more widely proclaimed.

Amateurs may suffer as serious ocular lesions as professionals. Young adults have died of middle meningeal hemorrhage after relatively slight blows on the head, and others have suffered lasting brain damage. Only specious arguments, Doggart declares, can bolster up a pastime which should soon be as obsolete as galley slaves or the chain gang.\*

Compensation for Ocular Injuries in the United States: Review of Progress. M. Davidson. American Journal of Ophthalmology, Vol. 39, p. 821. June 1955.

Great confusion exists in administering workmen's compensation for eye injuries. Each of the 48 states has a separate law, and only eight of them follow the recommendations of the A.M.A. Committee on Visual Eco-

<sup>\*</sup> Editor's Note: Suggested School Health Policies, a pamphlet distributed by the American Medical Association, specifies that: "Interscholastic boxing should not be permitted."

nomics in disability rating. Another 13 states use a compromise between the A.M.A. rating based on corrected visual acuity after an accident and the old basis of uncorrected acuity, which is still the rule in 25 states.

A concerted effort should be made by ophthalmologists to call attention to the inequities resulting from using uncorrected vision as a basis for compensation. It means that minor eye damage is often overcompensated, and serious cases are underestimated. In the United States disability rating is based on physical impairment rather than economic loss. The importance of optical aids is not yet reflected in state compensation standards, and the outmoded prejudice against visual aids persists.

On the basis of draft rejection figures and other statistics 20 per cent of our adult population has defective vision not correctible to normal, and an additional 20 per cent wear or need to wear glasses. This shows the need of pre-employment eye examinations such as are now given to workers in the large industrial establishments, who compose about half of the labor force.

Another anachronism in the compensation picture is the fact that 99 per cent of all awards for eye injuries are made solely in terms of visual acuity for distance, ignoring other impairments.

Safety Hazard of Tinted Automobile Windshields at Night. H. Haber. Journal of the Optical Society of America, Vol. 45, p. 413. June 1955.

Tinted optical media, particularly the darker brands of tinted windshields, critically increase the dangers of night driving, especially under conditions of low luminances and the resulting small visibility distances caused by poorly reflecting targets.

A theoretical analysis of the effects of tinted windshields upon visibility distances on the highway at night is presented. The loss percentages in visibility distances by tinted as against clear windshields are calculated as functions of these variables: transmittance of the tinted medium, isocandle profile of the headlamp, angular size and reflectance of the target, and the distance of the target itself. The losses increase as distance decreases. At 200 to 1,000 feet the losses caused by tinted windshields run from 9 to 15 per cent. But they may be as high as 30 to 45 per cent when the target is nearly matched to the background. For instance, a dark-clad person projected against a dark pavement might at certain luminances be detected through a clear windshield at 150 feet. but the driver looking through a tinted windshield would detect the person at a distance of only 100 feet.

The ASA Safety Code stipulates that tinted windshields must have a transmittance of not less than 70 per cent, which makes them inadequate for protection against glare. A transmittance of 12 per cent is considered effective for that purpose. Thus the only advantage of a tinted windshield appears to be its ability to absorb radiant heat, and this does not seem to warrant increasing the hazards of night driving. A compromise would be the use of dark sunglasses for daytime glare protection, and clear windshields of the highest attainable transmittance. It is recommended that the 70 per cent minimum transmittance requirement for windshields in the American Standard Safety Code Z26.1-1950 be reconsidered.

Ophthalmologic Findings in Applicants for Blind Pension. A. Laird. Eye, Ear, Nose and Throat Monthly, Vol. 43, p. 743. November 1955.

The need of a rural district for facilities for eye care was revealed in a review of ophthalmic examinations of 619 applicants for blind pensions in a Pennsylvania county. Many of these cases of blindness could have been prevented by the establishment of a county eye clinic, since patients in the remote section covered by this report could not receive needed treatment or surgery without traveling hundreds of miles.

The ophthalmologist's findings over a period of 14 years show that out of 619 persons with 1,238 eyes sight was lost in 475 eyes (about 37 per cent) from cataract, aphakia or luxated lens. Senile cataract accounted for 424 of this group, and postoperative aphakia 21. Glaucoma was diagnosed in only 40 cases, a definitely low figure compared to other studies. There were two cases of diabetic cataract and 19 of diabetic retinitis. Only one diagnosis of ophthalmia neonatorum as the cause of blindness appeared on the records.

Progress Report of Partially Blind Cases. I. I. Vics. American Journal of Optometry and Archives of American Academy of Optometry, Vol. 32, No. 4, p. 192. April 1955.

Visual rehabilitation of partially seeing persons by the use of telescopic spectacles is analyzed in 100 cases with pathologies of a non-progressive nature. Of this group 45 had retinal or choroidal pathology, 24 lens involvements, 14 pathology of the optic nerve, and 9 glaucoma. There was no evidence that the age of the patient,

duration of partial blindness or type of pathology were of significance in determining the prognosis.

All these patients were given telescopic spectacles, supplemented in 18 cases with microscopic glasses. At the end of the rehabilitation period during which the patient was trained in the use of the spectacles all were able to read newspaper print. Of 72 patients with a starting acuity of 12/200 or less only eight failed to make gains. In the whole group 40 patients continued to gain in acuity after the treatment period, 39 held to the acuity achieved in the progress examination and 21 dropped back to the level recorded in the first visit.

Those individuals who failed to retain acuity gains were found to have progressive disease, disturbed psychogeny, or difficulty in using the devices as prescribed. The psychological factor was highly important in building improved vision.

Lighting for the Forgotten Man. Sylvester K. Guth and A. A. Eastman. American Journal of Optometry and Archives of American Academy of Optometry. Vol. 32, p. 413. August 1955.

Individuals vary so widely in visual performance that specifications for lighting should take these variations into account, and give everybody an equal chance for seeing.

Visibility measurements were made by 40 observers aged 18 to 61 years who all had normal or corrected vision. The task was a printed sample of 8-point type viewed with lighting of 10, 20, 40, and 100 footcandles. The Luckiesh-Moss visibility meter was used for testing visibility levels.

Seeing performance for all observers

improved with increased illumination. Individual requirements for light enough to barely distinguish an object varied from 10 to 88 footcandles. By the usual criterion, this group had an averaged light requirement of 32 footcandles for a given task. But at this average light level 16 of the 40 observers could not see the test object, and to make it visible to the whole group nearly three times the average light was needed. The age group from 46 to 65 required two or three times as much light for a given visibility level as the 16–25 age group.

These wide individual differences do not mean that individualized lighting is needed in typical working situations. Since everyone benefits from higher footcandle levels, better lighting would merely enable those of lower visual acuity to reach a desirable level.

A Visit to Some Scandinavian Eye Clinics. P. M. Guinan. Transactions of the Ophthalmological Society of the United Kingdom, Vol. 74, p. 577. 1954.

Use of the electro-retinogram in diagnosing certain eye conditions was observed in the Karolinska Hospital in Stockholm. Professor Karpe of the state medical school connected with the hospital is one of the world experts on ERG.

Electro-retinography is useful in deciding whether the child of parents affected with retinitis pigmentosa will develop the disease or not. If the ERG is normal in a young baby he will escape the disease; otherwise the ERG is extinguished. The test can also distinguish between primary and secondary retinitis pigmentosa.

The retinogram gives a general picture of the vitality of the retina, and is a prognostic aid in retinal detach-

ments. In Professor Karpe's experience the ERG indicates with only a three per cent error whether the retina will re-attach after operation. In the same way the ERG indicates whether a cataract operation will be successful; if the retinogram is negative or extinguished a grave retinal lesion is indicated and the operation will probably be fruitless.

An incipient or early siderosis is revealed by a supernormal tracing on the retinogram. The ERG is useful in estimating the ultimate prognosis in vascular disturbances such as venous thrombosis.

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The apparatus is expensive to buy and operate, and is suitable for a clinic where time and money can be spent on research. At present the instrument can give no information about the macula, and attempts are being made to get tracings reflecting the macula, and also to develop a functional test for early glaucoma.

Gonioscopy in Congenital Cataracts. A. Vannini. Rassegna Italiana d'Ottalmologia, Vol. 24, p. 281. July 1955.

Many cases of congenital cataract show mesodermal tissue in the angle of the anterior chamber and foetal defects in other structures of the globe. Such alterations often indicate the period of development when the anomalies arose. Three cases are illustrated by colored plates. In case I, mesodermal tissue covers the ciliary muscle and scleral trabeculae, the second shows insertion of the iris on the corneal wall, while in the third the irido-corneal angle is occupied by abnormal uveal trabeculae.

EUGENE M. BLAKE, M.D.

# **BOOKS AND PAMPHLETS**

THE PREVENTION OF DISEASE IN EVERYDAY PRACTICE. Isadore Givner, M.D., F.A.C.S., and Maurice Bruger, M.D., F.A.C.P., and Contributors. The C. V. Mosby Company, St. Louis, 1955. 964 p. \$20.00.

Written for the medical profession by 47 practitioners, each a specialist in a recognized field, this book reflects the broadening concepts of preventive medicine today. In their preface the editors say: "The physician has been concerned too long with the practice of reparative medicine alone . . . the prevention of disease is an important aspect of his obligation to society."

This attitude is plain in Dr. Givner's own contribution, the chapter on Preventive Ophthalmology, in which he points out the obligations of the various specialists-internists, obstetricians, and pediatricians. He warns the anesthetist that in 17 known cases "inadvertent pressure on the eve during closed mask anesthesia has induced central retinal artery occlusion" and in eight others patients lying prone under intertracheal anesthesia with a face rest pressing on the eve have suffered unilateral blindness. For his colleagues in ophthalmology Dr. Givner has many suggestions which illuminate the need for incessant vigilance against infection and preventable complications in office and surgical procedures.

Dr. Paul A. Chandler follows with a chapter on glaucoma, which he limits to prophylactic peripheral iridectomy for angle closure glaucoma. He believes that the peripheral method, if properly done, is as effective as the basal technique, and involves a minimal risk to the integrity of the eye.

Dr. Byron Smith discusses plastic surgery about the orbital region, pointing out danger factors to surgeons unfamiliar with ophthalmology. Dr. John M. McLean describes the complications to be avoided in cataract surgery, which he believes are by the extracapsular increased method. The thing most to be avoided, he writes, is loss of vitreous, and the essence of prevention is the elimination of pressure. A final section by Dr. C. L. Schepens on surgery in retinal detachment points out complications which are often preventable, and which in many cases may be avoided by a scleral buckling procedure.

A GUIDE FOR THE PLACEMENT OF THE PHYSICALLY HANDICAPPED: FIFTH EDITION. PART III. SHIPBUILDING POSITIONS. United States Civil Service Commission, 1953. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 302 pp. 75 cents.

This pamphlet is one of a series designed to help those who employ men and women with certain physical handicaps: orthopedic or chest disabilities, and defective vision or hearing. It is based on job studies by the medical officers of the Civil Service Commission who are working out the physical demands of hundreds of types of positions represented in the service. This medical job analysis offers much of value to the civilian employer as well. The *Guide* describes what each sort of job requires physically, and

what handicaps are allowable for it, and then lists the positions suitable for persons with a particular handicap.

About a thousand positions are listed for persons blind in one eye with good vision in the other, for the shipbuilding industry alone. This group is considered to have great placement potentialities, and exclusion from certain types of work is based on their possible hazards to the worker. Unless the one-eyed person has developed stereopsis, he should not be employed on scaffolds or high places, or operate moving machines, or drive motor vehicles. Since the protection of his remaining eye is all-important, he should wear safety glasses.

The approved list of shipbuilding positions for the one-eyed man or woman includes many requiring the high visual acuity that some persons with monocular vision possess. Along with manual jobs there are many connected with photography, the making of optical instruments, repair of electronic devices and calculating machines, inspection of precision tools, and mechanical drafting.

Many of the positions judged suitable for one-eyed persons are appropriate for those with impaired acuity in both eyes, up to and including the range of "industrial blindness." The Commission does not exclude the latter from its lists, and considers that persons with vision of 20/100 to 20/200 in the better eye with correction can function successfully in certain jobs. Here again the emphasis is on protecting the worker from further loss of vision by placing him in a relatively non-hazardous position.

Color blindness is not considered a disability for most types of work. The Commission does not require drivers of motor vehicles to have normal color vision, since it has not been proved that the color-blind have a higher accident rate than those with normal color vision.

Services for Handicapped Children. A guide to general principles and practices for public health personnel. Committee on Child Health of the American Public Health Association, New York, 1955, 150 p. \$1.50.

Six years ago the Committee on Child Health of the American Public Health Association decided to publish a series of manuals on various handicapping conditions for the concrete guidance of public health workers. More than 200 specialists in the medical, rehabilitation and public health fields are assisting the Committee in the preparation of ten manuals on conditions from cerebral palsy to eye problems, and the present basic guide.

Services for Handicapped Children deals with problems common to the various handicapping conditions. It outlines methods of making the most of existing facilities, of coordinating community services to avoid duplication of efforts, and of planning special services to handicapped children.

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# THE SIGHT-SAVING REVIEW

Volume XXVI

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